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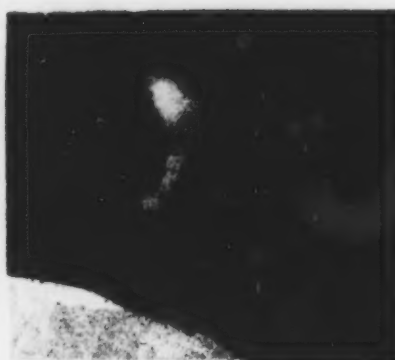
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ABSTRACT

A national survey of more than 800 teachers found that these teachers' top reason for participating in professional development is to bolster their ability to help students learn; almost 3 in 4 said they engage in professional growth to improve student achievement; and a majority (55 percent) said they participate in professional development to improve their teaching skills. This report explores the conditions and policies needed to incorporate teachers' learning into their daily work in the schools. It identifies the incentives, processes, policies, and structures that support wise, shared decisions about teachers' own learning and that of their colleagues so that they will be better able to serve their students. The research base is clear for both beginning and experienced teachers: sustained teacher learning connects directly with student results. Findings from this study indicate that providing for effective professional development requires: (1) flexible scheduling; (2) extended school year for teachers; (3) school-based professional development; (4) standards and accountability; (5) balancing individual teachers' and school needs for learning; (6) peer assistance and review; (7) expanded role for teachers; and (8) induction of teachers. Two appendices provide the sources of this report and a list of other organizations. (Contains 297 references.) (JLS)

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TEACHERS TAKE CHARGE OF THEIR LEARNING



Transforming Professional Development for Student Success

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NFIE's mission is to promote excellence in teaching and learning. The foundation carries out this mission by providing teachers, other school employees, and higher education faculty and staff with opportunities to develop and test solutions to the challenges facing American public education. These opportunities include grants, technical assistance, professional collaboration, electronic networking, and support for developing leadership roles.

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Transforming Professional Development
for Student Success

The National Foundation for the Improvement of Education

The preparation of this report was supported by The George Gund Foundation, The Pew Charitable Trusts, the John D. and Catherine T. MacArthur Foundation, and The National Foundation for the Improvement of Education. NFIE wishes to acknowledge and thank the 2.2 million members of the National Education Association for their support of excellence in education.

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Dedicated to William H. Kolberg, member, NFIE Board of Directors, and president emeritus, National Alliance of Business, who urged that this report be written so that what NFIE has discovered about professional development will be made available to all who go to school to teach and to learn.

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Weaving continuous learning for teachers into the fabric of the teaching job is the foundation for large-scale improvement of student achievement in all public schools. This work can and should be initiated by the teaching profession itself, in partnership with other education employees, communities, districts, and states in an effort to reshape public schooling in order to support continuous learning for all the workers in every school—adults and children alike.

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American teachers overwhelmingly judge the value of their professional growth by its effect on their students. Teachers are clear about the purpose of continuous learning: First and last, it is student learning that drives their passion for professional development. Improving the quality of teaching now means a lifetime of study and a workplace that supports continuous learning as an integral part of the daily, weekly, and yearlong job. Working toward this goal individually and collectively must become a top priority. Teachers and their organizations are ready to work for this goal in partnership with school boards, parents, government, community groups, and others.

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Ask teachers what they need in order to do a better job, and the first response is always "more time." Teachers need time to prepare and equip themselves with the knowledge and skills necessary to maximize student learning. Professional development for teachers must become a seamless part of the daily and yearlong job. Teachers' learning must be accommodated by changes in how time is used throughout the school year and beyond it.

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Teachers in the past have exercised little control over their professional lives. In today's effective schools, however, teachers make important decisions about their teaching and the life of the school as a whole. Teachers' responsibilities have grown beyond the isolated classroom walls to embrace the success of all children and adults who work in the school. Teachers are assuming a greater role in their own professional development and that of their colleagues. Enhancing student learning entails constant improvement in teaching and expanded roles for all teachers, including peer assistance and review.	
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Although teachers must be allowed greater responsibility, they should not carry the entire burden alone. To increase their ability to serve students, teachers need partners who can help them enhance their knowledge and skills. Parents are teachers' most important partners. Other partners include universities, libraries, museums, other community organizations with educational missions, and businesses. Teachers and these organizations should form long-term, genuinely collaborative relationships. Such cooperation could fulfill the obligation of each of these educational, cultural, or private organizations to the public. Rich resources should be made available to support teachers' and students' learning. Each community should enhance or create long-term partnerships for teachers' professional development. In addition, the federal government should establish a national institute for teachers' professional development.

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We do not have full information about how much states and districts currently spend on professional development. Various studies recommend increasing expenditures by specific amounts or percentages, but the job of teaching envisioned and recommended by this report suggests a long-range goal of institutionalizing such expenditures and requiring all education funds to be supportive of teaching and learning. New expenditures may also be necessary to build high-quality professional development into the foundation of the teaching job. These can be calculated if states and districts will undertake an assessment of their current professional development expenditures, agree with teachers' organizations on appropriate measures of professional development effectiveness, and gain public support for new appropriations as needed.	
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FOREWORD

Over the past decade or two, a quiet revolution has begun. The teaching profession, from within, has been transforming itself from a semiprofession into a real profession, one based on knowledge and the responsible application of that knowledge. Some of the hallmarks of that transformation include the National Board for Professional Teaching Standards (NBPTS), thirteen independent state teacher licensing boards, the National Council for the Accreditation of Teacher Education (NCATE), and the National Education Association's National Foundation for the Improvement of Education (NFIE).

We say "quiet revolution" because these developments have taken place largely without the notice of the media and therefore without public notice. The revolution now needs public support to fulfill its promise.

For over a quarter of a century, NFIE has been making grants and providing resources and assistance to educators to carry out innovative ideas to reduce dropout rates, design education for a diverse society, support improved curricula, enhance professional associations, and integrate technology into teaching and learning. NFIE's grantees have produced substantial results in hundreds of schools and many higher education institutions all over the United States. By studying results of grantees' work, we have learned that:

- Adult learning takes both *time* and *sustained effort* to advance from new ideas to changed practice and ultimately to increased student achievement.
- When educators work with colleagues to address the needs of students, positive effects increase.
- The most successful improvements in teaching practice are those sustained for a minimum of three years and that engage multiple members of each school's staff working in partnership with its broader community.
- The most successful projects are dedicated to the entire population of a school and deeply engage the whole staff in learning, evaluating, field-testing, revising, and implementing.
- Successful professional development for teachers results in increased student learning as measured by appropriate assessments and standards.

Faced with the demands of a twenty-first century world economy and society and an increasingly diverse student population, America has begun to reinvent its schools. Not since the end of the nineteenth century has so much energy gone into reconceiving the purpose and functioning of public education. Throughout most of the twentieth century, the schools served

the industrial age and adopted its organizational forms. Mass education for most and elite education for a few fostered industrial-age schools and teaching. Improving the schools often meant "teacher-proofing" the schools in the fashion of "worker-proofing" the assembly line.

The limits of industrial-age schools in the postindustrial, information age are clear. If individuals are to succeed—and if America is to prosper—schools must help all children to acquire knowledge, higher-order intellectual skills, and civic-mindedness. This requires teachers who not only have these attributes but also the knowledge, skills, and dispositions to help children acquire them.

The era of teacher professionalism has arrived. No longer workers whose actions are prescribed by rules, curriculum packets, and supervisors, information-age teachers are becoming career-long learners. Fortified with knowledge acquired in universities, seasoned with skill acquired under the tutelage of accomplished professionals, teachers are preparing to take charge of their learning.

Teachers, school administrators, and communities need to join together to make all schools learning organizations and all teachers learners. Effective teaching in the twenty-first century will require continuous learning by all school personnel. Knowledge will continue to explode, changes in information-age technology seem likely to accelerate, and unfortunately, many more children will reach school unprepared to thrive.

In the information age, the quality of education a child receives will be critical. Every child should expect a well-prepared, qualified, and committed teacher in every classroom. To this end, teachers, their representative organizations, school administrators, and communities are beginning to work together to transform teaching for improved student results.

We invite every community to join the revolution.

Arthur E. Wise

Chair, Board of Directors

The National Foundation for the Improvement of Education

PREFACE

Every profession has a system through which its members can hone skills, improve practice, and keep current with changes in knowledge, technology, and the society it serves. Doctors, lawyers, architects, accountants, and engineers regularly participate in workshops, seek advanced degrees or certification, and serve as or work with mentors. Professionals in most fields routinely network with fellow practitioners, conduct and review research, and talk to experts and colleagues about new trends, thorny issues, and plans for improvement.

These opportunities for professional growth and renewal often take place within the workplace and are integrated into the daily life of the practitioner. Opportunities to develop professionally not only benefit the individual in shaping and performing his or her craft but also help ensure that best practice is everyday practice and that the most effective approaches are used. In fact, the ability of practitioners to engage in ongoing, high-quality professional development is a hallmark of enterprises that are known for high performance and that, not surprisingly, enjoy sustained public confidence.

Unfortunately, the nation's schools fail to provide adequate professional development for teachers. Today's teachers are expected to keep abreast of new knowledge, individualize instruction for a diverse population of students, help all students achieve high standards, introduce new technologies into the classroom, become expert in student growth and development, help manage the school, and reach out to parents and the community. America's teachers are striving to do all this and more, but they find themselves pressed for time and opportunities to learn. Teachers should work collaboratively; yet all day they are isolated from other adults. Neither the time nor the telephones are available to communicate with other professionals in or outside the schoolhouse.

As in other fields, the goal of professional development in schools must be to improve results, not simply to enhance practice. NFIE has found, and this report demonstrates, that teachers are clear about their priority: The goal of professional development for teachers is increased student learning.

Asian and European nations regularly invest in opportunities for teachers to upgrade their skills, observe exemplary teaching, plan lessons, and work collegially. Japanese teachers, for example, spend roughly 40 percent of their working day on professional development and collegial work, compared with only 14 percent for American teachers (Stevenson and Stigler 1992, 163-4). American business recognizes that learning is part and parcel of every job in a learning organization. Business restructured in the 1980s and government in the 1990s to build professional learning into the workplace. Now is the time to do so in our public schools.

Parents and the public also know that teacher quality is crucial to student success. That is why parents go to great lengths to ensure that they have the best teachers for their children and why they protest so vehemently when they perceive that a teacher does not meet their standards. Research by the Public Agenda Foundation indicates that the public expects teach-

ers to teach the basics and to elicit higher levels of achievement from students (Johnson and Immerwahr 1994). Public Agenda's research for The National Foundation for the Improvement of Education (NFIE) further indicates that the public recognizes the need for better partnerships between teachers and parents and for schools to view information technologies as a new "basic" that all students must learn if they are to prosper in school and in life (Public Agenda 1995).

NEW DEMANDS FOR A NEW ERA

Changing times require that schools become learning enterprises for teachers and for students. The way teachers currently learn on the job was designed for teachers of an earlier time before the public grew concerned with higher standards and improved performance for all students.

Today, teachers are no longer perceived as mere functionaries handing out and collecting materials prepared by commercial or bureaucratic sources outside the classroom. Modern teaching and learning can no longer be prepackaged and require far more sophisticated approaches to teacher development and to the organization of the workplace where teachers spend their days.

Today, all students are expected not only to learn the basics but also to master new information technologies in order to enter a world of work where there are fewer and fewer routine jobs, where a career will span a number of different jobs of varying complexity, and where flexibility and teamwork are necessary to make the grade throughout life. Today, school faculties are taking on more responsibilities for student growth, tailoring curriculum and assessment to meet student and community needs, and even managing the school.

Today's teachers must take on new roles within the school and be able to teach young people from diverse backgrounds by drawing on a large repertoire of subject matter and teaching skills. Teachers now must be sensitive to varying social demands and expectations; must be able to diagnose and address the individual learning and development needs of students, including special emotional, physical, social, and cognitive needs; must be able to use information technologies in all aspects of their work; must make important decisions about what and how much to teach of the overwhelming amount of new knowledge being created in every field; and must reach out more effectively to parents and the community than ever before.

NFIE DEFINES HIGH-QUALITY PROFESSIONAL
DEVELOPMENT AS THAT WHICH

- has the goal of improving student learning at the heart of every school endeavor;
- helps teachers and other school staff meet the future needs of students who learn in different ways and who come from diverse cultural, linguistic, and socioeconomic backgrounds;
- provides adequate time for ongoing reflection and learning, and is an integral part of the normal workday of all professional educators;
- is formally recognized and valued in the long-term choices of districts;
- is directed toward teacher self-directed development and leadership;
- fosters a deepening of individual teacher skills, a greater understanding of teaching, and a greater appreciation of students' needs;
- is designed and directed by teachers, incorporates the best principles of adult learning, and involves shared decisions designed to improve the school;
- balances individual priorities with school and district needs, and advances the profession as a whole;
- makes best use of new technologies;
- is site based and supportive of a clearly articulated vision for students.

MEETING PUBLIC EXPECTATIONS

The public has made it clear that this is a time for improved results in American education. But to help make those results happen, teachers need time to master new knowledge and to work with their colleagues and with partners to build on what they know. They need flexible scheduling and an extended year to integrate professional growth into the structure of the school day. Teachers need time to develop expertise in using information technologies to develop new pathways to knowledge for students. And they need opportunities to build meaningful partnerships with parents, businesses, and educational and cultural institutions to create exciting new learning experiences.

The existing model for teachers' professional development is beginning to shift to a new, more results-driven model:

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FROM	TO
Isolated, individual learning	Learning both individually and in the context of groups, such as the whole school faculty and teacher networks interested in particular subjects
Fragmented, one-shot "training"	Coherent, long-range learning
District-level, one-size-fits-all programs	School-based learning tailored to the needs of all the students in the building
Bureaucratically imposed	Focused on student needs
Outside the workplace	Embedded in the job and closely related to both student and teacher needs
Experts telling teachers what to do	Teachers taking an active role in their own growth
Skills that can be used by everyone and therefore available in depth to no one	Involvement of all teachers and instructional leaders in developing new approaches to teaching based on their needs
Teachers as passive receivers	Teachers and administrators as active makers of their own learning
Adult learning as an add-on that is not essential to schooling	Adult learning as a fundamental way of teaching and a transformation of schooling
Measuring effectiveness by attendance at workshops	Measuring effectiveness by improvements in teaching and learning

(Spark, 1995; Little 1995; Sykes, 1996)

Other changes are needed as well. Teachers need opportunities to take on new roles within the school, serving as mentors, facilitators, community liaisons, curriculum development and assessment experts, and managers of change. Teachers will take on leadership roles as they gain special expertise, balancing their individual learning choices with the overall needs of the school.

Because helping students achieve requires the collaborative work of many adults in each school and community who share responsibility for educating students, teachers must participate in the collective growth and development of other teachers in the school. A fundamental part of that work is the continuous improvement and growth that changing times, changing students, and a changing society necessitate. Expanded roles for teachers must include opportunities to provide peer assistance and review. In order for teachers to take charge of their learning, they and their organizations must play a role in enabling all teachers to become even better. If after sustained assistance by specially prepared peers some do not meet professional standards of practice, they should be counseled to leave the profession. Collective bargaining, where it exists, and advocacy can be major avenues for bringing about NFIE's recommendations. Together, teachers' organizations and partnering districts, states, and others can make this vision a reality.

This report explores the conditions and policies needed to incorporate teachers' learning into the very fabric of their daily work in our schools. It identifies the incentives, processes, policies, and structures that support wise, shared decisions about teachers' own learning and that of their colleagues so that they will be better able to serve their students.

The report challenges principals and other school administrators, working with teachers and existing resources, to create workplaces that support teachers' ongoing professional development. It challenges educators and communities to find a way to measure accurately what resources are currently devoted to professional development and to ensure that sufficient resources are available and well spent. The report also challenges teachers and community leaders to create time for teachers' learning and partnerships with community institutions that will nurture teachers' growth and students' success.

Too many efforts to reform the educational system have looked for cheap, short-term solutions, such as tougher tests for students or simple demands for better performance from schools. Learning is not short and easy, unfortunately. It is long and hard—for adults, as well as for children. Changing a half-trillion-dollar industry involving millions of adults and 44 million children, 15,000 jurisdictions, and fifty states just will not happen without a long-term vision, effort, and investment by all. Reform is not just about policy or structure or a one-year turnaround in test scores. It is about teachers' learning, profound changes in practice, a system that nurtures and sustains both, public patience, and the hard work of students.

Nearly two decades of experimentation to change America's public education system have revealed important indicators of how to meet teachers' learning needs. Major recent reports prepared for state policymakers (Corcoran 1995b; Houghton and Goren 1995) stress that professional

"I can't wait for September so I can share what I just learned with my kids."

TEACHER IN AN INTENSIVE SUMMER INSTITUTE

development needs to be embedded in the job of teaching, to enable teachers to balance individual and school needs in choosing what to learn, and to ensure the quality and productivity of professional

development through the setting of professional standards. The state role should ensure adequate time for professional development; connect professional development to school-based management and staff decision making; promote partnerships linking teachers, academics, and teachers' organizations; ensure equitable funding for the growth of all teachers, especially those serving the poor; establish exemplary schools as laboratories that support visits by teams of teachers; and promote collaborative work and learning by including a broad range of work in schools as part of what counts toward recertification. Central school district offices should, for the most part, go out of the business of designing and delivering continuing education programs or hiring commercial companies to do it for them. Professional development is the business of the staff of each school and of the profession at large.

PREMISES

In all that follows in this report, we base our analysis and recommendations on the following premises:

- *The public trust in our public schools defines their primary purpose as the academic and civic development of all children.*
- *The primary purpose of teachers' professional growth is to improve their ability to realize the academic and civic development of the students they serve.*
- *The profession must step forward to take responsibility for individual and collegial quality in the context of a supportive system.*

ABBREVIATIONS

AAHE	AMERICAN ASSOCIATION FOR HIGHER EDUCATION	NCTM	NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS
ACT	ACADEMIC COMPETITIVENESS THROUGH TECHNOLOGY ACADEMY	NDEA	NATIONAL DEFENSE EDUCATION ACT
AFT	AMERICAN FEDERATION OF TEACHERS	NEA	NATIONAL EDUCATION ASSOCIATION
BEA	BELLEVUE (WASHINGTON) EDUCATION ASSOCIATION	NECTL	NATIONAL EDUCATION COMMISSION ON TIME AND LEARNING
CEA	COLUMBUS (OHIO) EDUCATION ASSOCIATION	NFIE	THE NATIONAL FOUNDATION FOR THE IMPROVEMENT OF EDUCATION
COMPAS	COMMUNITY PROGRAMS IN THE ARTS (MINNESOTA)	NGA	NATIONAL GOVERNORS' ASSOCIATION
DATA	DADE ACADEMY FOR THE TEACHING ARTS	NHC	NATIONAL HUMANITIES CENTER
INTASC	INTERSTATE NEW TEACHER ASSESSMENT AND SUPPORT CONSORTIUM	NISDC	NEW IOWA SCHOOLS DEVELOPMENT CORPORATION
ISEA	IOWA STATE EDUCATION ASSOCIATION	NSDC	NATIONAL STAFF DEVELOPMENT COUNCIL
NASSP	NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS	OSU	OHIO STATE UNIVERSITY
NBC	NATIONAL BOARD CERTIFICATE (-ATION)	PAR	PEER ASSISTANCE AND REVIEW PROGRAM (COLUMBUS, OHIO)
NBPTS	NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS	SEA	SEATTLE EDUCATION ASSOCIATION
NCATE	NATIONAL COUNCIL FOR ACCREDITATION OF TEACHER EDUCATION	TEA	TENNESSEE EDUCATION ASSOCIATION
NCTAF	NATIONAL COMMISSION ON TEACHING AND AMERICA'S FUTURE	TEC	TEACHER EDUCATION CENTER (FLORIDA)
		UW	UNIVERSITY OF WISCONSIN
		WTEPB	WISCONSIN TEACHER ENHANCEMENT PROGRAM IN BIOLOGY

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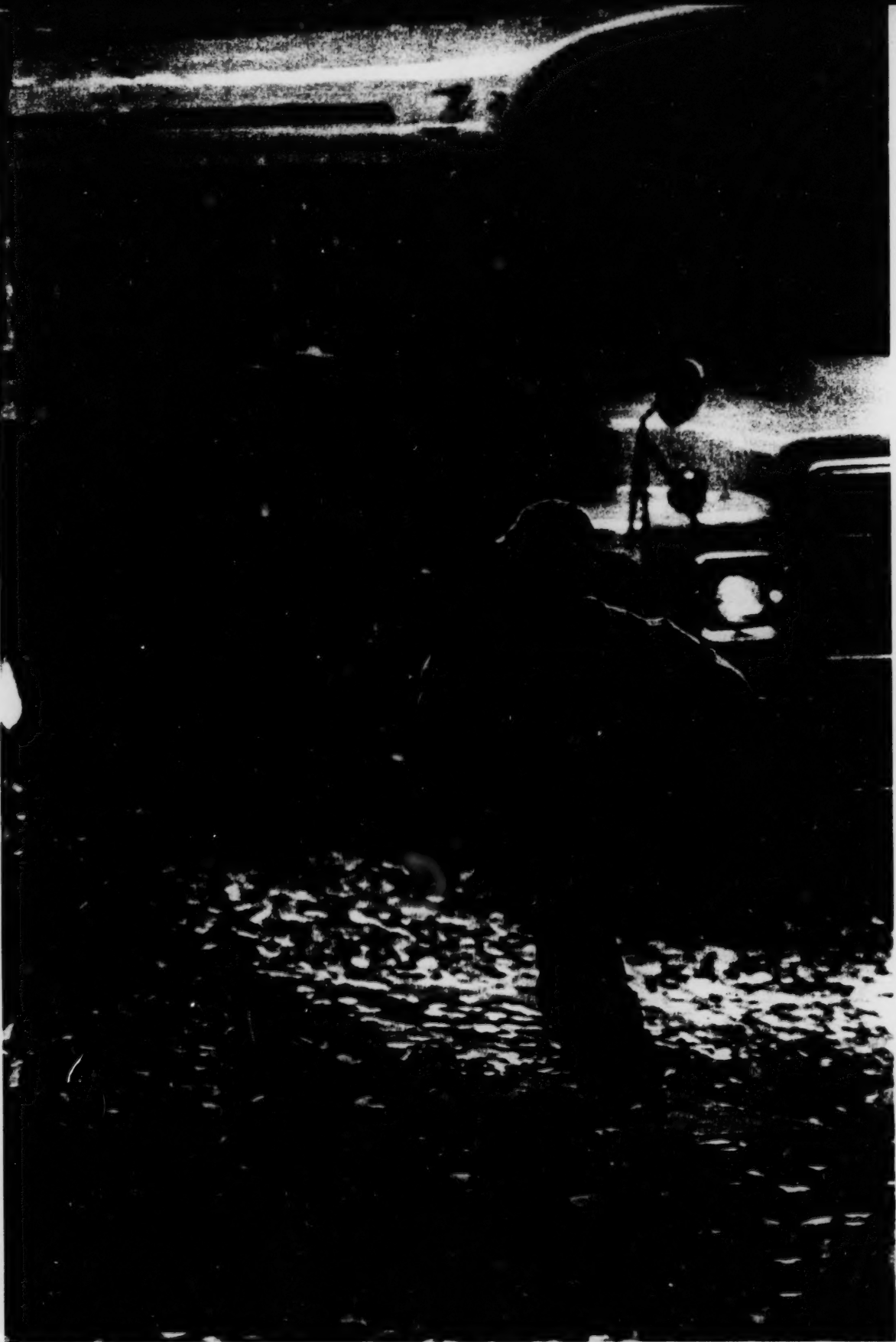
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To all who are named here and in the text, we extend our grateful thanks for their willingness to share their experiences. We hope that we have captured their spirit and truth. Any and all errors are the sole responsibility of NFIE.



I. TEACHERS' PRIMARY CONCERN: STUDENT ACHIEVEMENT

American teachers overwhelmingly judge the value of their professional growth by its effect on their students. Teachers are clear about the purpose of continuous learning: First and last, it is student learning that drives their passion for professional development. Improving the quality of teaching now means a lifetime of study and a workplace that supports continuous learning as an integral part of the daily, weekly, and yearlong job. Working toward this goal individually and collectively must become a top priority. Teachers and their organizations are ready to work for this goal in partnership with school boards, parents, government, community groups, and others.

WHAT DO TEACHERS SAY?

Teachers' interest in professional development is dedicated to improving student learning. A national study of how teachers view career-long learning was conducted with support from The National Foundation for the Improvement of Education (NFIE) and the National Education Association's (NEA) Research Department by Greenberg Research, Inc., and The Feldman Group. The study began by asking teachers, "What does 'professional growth' mean to you?" Nearly three-fourths of teachers surveyed responded that it means helping students learn. Most respondents used active phrases to define "professional growth," such as "keeping up," "with technology," "with [the] latest trends," "with my field," and so on. "Updating," "continuing," "becoming," "improving," and "increasing" abilities to serve students were at the heart of the response. Other teachers said, "improving my own skills as a teacher, as a colleague"; "[to] teach better [and] help my students"; "we are all learners [and] must grow if children are to grow"; "learning cooperatively with students, teachers, parents"; "meeting the needs of the students"; "to be a better teacher"; "becoming a better teacher"; and the poignant "being better than I was last year."

Figure 1

WHY TEACHERS SAID THEIR MOST PROFOUND PROFESSIONAL GROWTH EXPERIENCES WERE IMPORTANT—TOP RESPONSES

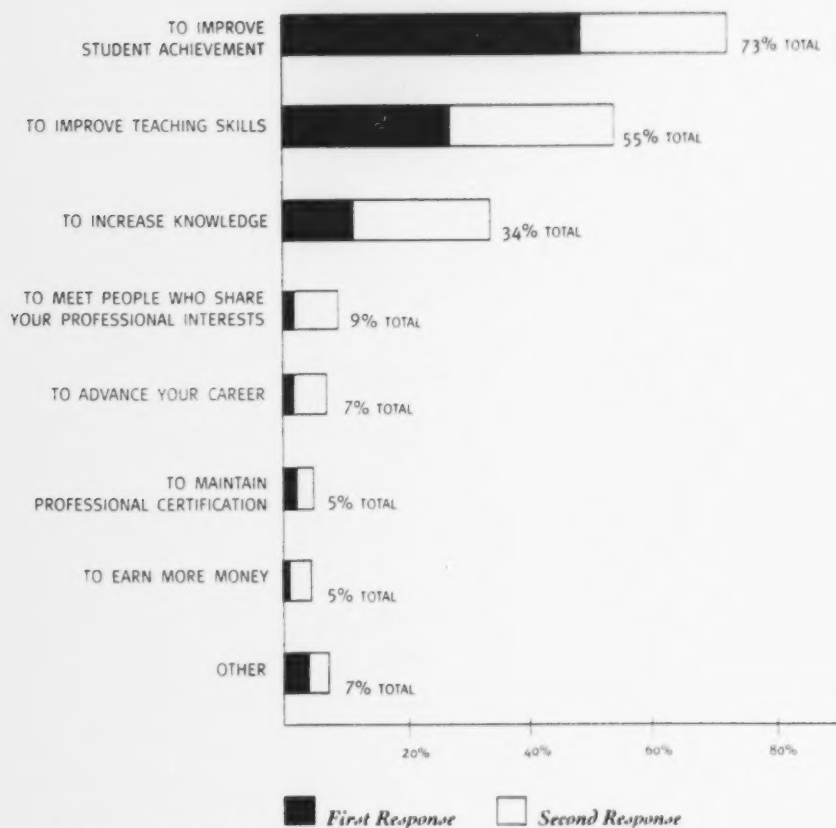
HELPED TO UNDERSTAND STUDENTS BETTER	17%
LEARNED NEW TEACHING METHODS/ACTIVITIES	15%
IMPROVED CLASSROOM SKILLS AND KNOWLEDGE	13%
IMPROVED KNOWLEDGE OF ONE'S FIELD	10%

Data Source: Greenberg Research, Inc.

Teachers told us how profound professional growth experiences affected them (Figure 1). Once again, students came first. In response to the survey question, "Thinking back over your pro-

Figure 4

TEACHERS' MOTIVATION FOR GROWING AS PROFESSIONALS



Data Source: Greenberg Research, Inc.

fessional life since you began teaching full time, [describe] the one formal or informal professional growth experience that has had the most profound effect on you as a teacher." teachers mentioned specific courses, seminars, workshops, and degree programs 30 percent of the time but ranged far beyond these formal, traditional means of learning to name the day-to-day work of a teacher, including collegial interactions and the success of their students.

When teachers study, they do so to improve student achievement (73 percent).

Improving teaching skills took next place (55 percent), and increasing their own knowl-

edge took third place (34 percent). Career advancement (7 percent), financial reward (5 percent), and maintaining professional certification (5 percent) were rock-bottom motivators (Figure 2).

The NFIE survey included phone interviews with 848 randomly selected members of the NEA who have been in the classroom more than three years and an oversample of another 228 NEA members who hold leadership positions at the state, local, or national level. These leaders also have at least three years of teaching experience and may or may not currently be teaching full time.

The survey asked teachers to identify issues of greatest concern to them in education. Parental involvement was cited most often (mentioned by 34 percent of the respondents), followed by a number of issues relating to students and teaching, including student motivation

"Educational change depends on what teachers think and do" (Inos and Quigley 1995, 1).

to learn, using technology, and preparing students for the future. When given a choice of nine possible seminar topics, 93 percent of the teachers expressed interest in learning about "increasing parental involvement," and 93 percent wanted to learn about "using technology for instructional purposes." Nearly as many, 90 percent, were interested in "updating . . . knowledge or skills." All nine suggested topics received majority positive responses.

The survey reveals that teachers are people who like to learn. At the top of teachers' agendas is a concern to learn how to reach out to parents, their main partners in education, and

Teachers surveyed told us that their learning is as often rooted in the daily work of interacting with students and colleagues as it is in set-aside course work and other traditional programs.

they are just as desirous of introducing the information age to their classrooms. These two issues were repeated like a refrain throughout the survey. Teachers surveyed told us that their learning is as often rooted in the daily

work of interacting with students and colleagues as it is in set-aside course work and other traditional programs. Teachers value nonprogrammatic opportunities for learning—the learning that comes from and through doing—equally to the formal and programmatic.

Research findings support the connection between teacher learning and student performance. For example, students' achievement in science and mathematics is linked directly to the extent to which their teachers have had substantial formal education in these fields (Davis 1964; Druva and Anderson 1983). For the use of technology to enhance student learning in various fields, findings are beginning to emerge that show teacher competence directly linked to student learning (NFIE 1995a). Professional preparation for teaching, formal certification, and formal induction programs also give rise to student achievement (Darling-Hammond 1990). Research findings are emerging on the connection between school-based, peer-assisted learning and student achievement as well (LeMahieu and Sterling 1991; Newmann and Wehlage 1995). The research base is clear for both beginning and experienced teachers: sustained, in-depth teacher learning connects directly with student results. These links depend, however, on teachers' ability to use their learning in the teaching assignment. When teachers' choices for learning match teaching assignments and school programs, students flourish. One-shot, district-determined, short-term programs have little effect on either teachers' or students' growth.

BUILDING A PROFESSION

Teachers' unions were formed to negotiate with the industrial-model school system and to establish due process and fair employment practices. Today, the unions recognize that schools must change and that with them, teachers' representative organizations must also change. In this report, therefore, unions will be referred to as *teachers' organizations* to signal the nature of that change, and many of the recommendations will specifically address the roles and responsibilities they should take to assure high-quality teaching. Both the American Federation of Teachers (AFT) and the NEA and their state and local affiliates have formed partnerships in some states and communities with education agencies and districts to support many aspects of school reform, including peer assistance and review, professional development schools, school

restructuring, school-based management, charter schools, and other structural, policy, and professional development reforms. Taking these efforts to the scale of their entire memberships should be a priority for every local, state, and national teachers' organization.

The NEA represents two-thirds of America's 3 million public school teachers, and the AFT represents another 12.2 percent. The subject-matter societies, such as the International Reading Association and the National Council of Teachers of Mathematics (NCTM), represent, along with the NEA and AFT, the professional interests of nearly every public school teacher in the United States. These associations are

working to raise the standards for students and the ability of their members to teach to those standards. The subject-based groups will be designated *specialized professional associations* throughout this report.

At the March 1996 Education Summit in Palisades, New Jersey, the co-chairs were a governor and a corporate executive. Many of the headline-grabbing pronouncements on what is wrong with public schools and how to fix them have been made by government and corporate leaders, researchers, and others far from the classroom. Teachers have meanwhile begun to take an active role both in expressing their analyses of the issues and in devising professional means of improving their teaching.

Teachers' specialized professional associations, *not* the federal government, have devised rigorous standards

in school subjects, and these are the reference points for student standards being put in place by the states now. Teachers have devised teaching standards for the national certifications issued by the National Board for Professional Teaching Standards (NBPTS), a private, non-profit, professional organization. Teachers' organizations, such as the NEA and the AFT, help sustain the accrediting agency, the National Council for Accreditation of Teacher Education (NCATE), that is working to set high standards for teacher education. Independent state standards boards, primarily composed of teachers, now exist in thirteen states to establish and enforce initial teaching licenses on the basis of high standards of performance.

All these groups are increasing their efforts to enable teachers to take responsibility for a high-quality profession. But many barriers to professionalism persist. Resistant, top-down, and inflexible bureaucracies, paternalism

toward a feminized workforce, and the sheer inert weight of habit are among the many barriers to real reform. Of paramount concern to teachers, however, is finding the time

to learn and to prepare for the expanded work necessary to successful teaching today. Teachers' organizations have in many ways found themselves acquiescing in the roles structured for them by a poorly organized system. The system sometimes victimizes its workforce, and the workforce sometimes behaves like victims. The collective bargaining table, for example, was both a response to the realities of an adversarial system and a participant in creating it.

"The teachers and their professional associations have to prove that they will change."

ARTHUR E. WISE, PRESIDENT, NCATE

"Most teachers' contracts are nearly silent [on] professional development" (Goren 1995, 1).

Nearly 70 percent of Americans "say that if teachers were required to meet higher professional training standards, it would improve student performance" (Penn and Schoen Associates 1993, 6).

Both individual teachers and their organizations are trying to use the tools available to them to reshape that system—to provide room for professional behavior and to reach out as partners to management, governance, and the public in order to meet the needs of their students. Collective bargaining, where it exists, and advocacy can become powerful tools for reform and for increasing the quality of teaching and learning. This report calls for greater efforts on the part of the profession and its partners to make the changes we need to increase student success.

Although all the teachers' organizations have a clear stake in meeting the learning needs of their members, none has yet acted on a large scale to change what and how teachers learn on

Fundamental change in our public schools will depend on the knowledge and skill of every single one of the nation's 3 million teachers working in concert as a profession to enhance knowledge and skill and with administrators, school support personnel, parents, and communities to provide opportunities to use that knowledge and skill to help our children learn.

the job. A larger scale is precisely what is needed to improve our schools.

The constraints of traditional supervision, narrowly defined incentives, and other regulations limit the place of professional development in the schools to a marginal add-on. Both the system and the teachers themselves must invest in the profession and stand firmly for specific high levels of quality. The public must be assured that teachers'

increased autonomy will be repaid with increased responsibility. In return, the system must reorganize to support teachers' professionalism.

Teachers themselves are willing to accept a large measure of responsibility for their own growth, as individuals and as colleagues, and to measure that growth by changes in their practice that enhance student achievement. This report examines what nearly two decades of reform have proven effective in developing teachers' knowledge and skills throughout their careers. It urges teachers to take charge of their learning. Our public schools can and will meet the future needs of every American child if every teacher rises to the challenge and if every school and every state match the teachers' initiatives with the systemic changes necessary to nurture a high standard of professionalism.

Many governors, legislators, researchers, reformers, and others have tried to improve schools by tinkering with testing and policymaking or by exhorting changes in management designs, but they have too often neglected to look inside the minds and wills of the people who actually teach the children. For their part, teachers have sometimes stood aside while others have spoken at and for them, thus allowing those who do not teach to control teachers' professional growth.

Teachers agree that the academic and civic development of children is the primary purpose of school. They also agree that the continuing intellectual growth of teachers should be a central purpose of the organizations that represent them as well as of the specialized professional associations. Fundamental change in our public schools will depend on the knowledge and skill of every single one of the nation's 3 million teachers working in concert as a profession to enhance knowledge and skill and with administrators, school support personnel, parents, and communities to provide opportunities to use that knowledge and skill to help our children learn.

The educational system for the twenty-first century cannot and *must not* be the same educational system that was founded 150 years ago and that has strained to meet the demands of the past 50 years. Likewise, professional development for teachers cannot and *must not* be the same that barely sufficed in the twentieth century. A very different system that supports and encourages teachers' professional growth goes hand in hand with teachers' enlarged responsibilities. Each is important to the future of public education, and each is important to the other. In fact, it is no exaggeration to say explicitly that one without the other will not work.

WHO ARE THE PARTNERS OF THE PROFESSION?

The teachers themselves, as well as their organizations, specialized associations, teacher networks, and others, including the public, researchers, policymakers, and critics of the existing system, were canvassed for this report. Teachers' organizations have entered into considerable reform work, but they cannot achieve massive results alone. Legislatures, governors, districts, school boards, educational administrators, the private sector, parents, and all taxpayers have major roles to play in supporting the professional growth of teachers and the professionalization of the teaching workforce.

Many reforms currently being advanced focus on improving schools of education and tying them to public schools. But other institutions also have a role in helping teachers learn. Many institutions of higher education, individual academics, museums, libraries, and other cultural institutions have conducted small, high-quality professional development programs with teachers over the past two decades. University-based teacher education divisions have been partners in such work, but important professional development opportunities also abound across all fields and branches of higher education, including arts and sciences and the other professions, such as medicine, architecture, engineering, and law. Largely grant-supported, partnerships between these groups and teachers have been valued by teachers but have not been transferred to many classrooms or continued on a long-term basis.

The recommendations offered in this report closely heed the voices of teachers. External and school-based learning are recommended in equal balance. Collaborative decision making, assessing students' needs and guiding teachers' learning to meet those needs, and extensive opportunities to learn from and with colleagues are major mechanisms that correspond to what teachers find most helpful. Of equal importance are opportunities to gain access to the world of learning outside the schools as long as teachers have opportunities to adapt that learning to the needs of their school and their students and the ability to integrate technology into all these objectives.

This report cites many examples of schools in which teachers are learning from and with each other and with parents through concerted, shared efforts to improve student learning. It also cites many schools that have successfully incorporated technology into instruction and that have found teaching and learning transformed by it.

These are the priorities, coming first and foremost from the people who work with students every day and corroborated by the public that supports education for the common good. As one teacher said, "It's the kids."

THE ACT ACADEMY: THE VISION IN THE MAKING

At the Academic Competitiveness through Technology (ACT) Academy in McKinney, Texas, professional development is interwoven throughout the school year and day. Like many other schools in transformation, it is a work in progress, providing one example of how the issues discussed in this report are being addressed.

The learning center is designed to test innovations and to discover which are most effective in reaching the diverse student body and each of its individuals so that successful strategies can be studied by other schools for replication.

Seven months before the ACT Academy opened, staff members were chosen based on their willingness to be lifelong learners and question their approach to education and teaching. The ACT Academy was awarded a unique U.S. Department of Education grant, and 34 percent of the \$5.5 million was used to renovate an old school for state-of-the-art use of information technologies. The newly selected staff worked with the architect to design a home for learning.

The seven months of planning time before students entered provided unprecedented opportunities for staff planning and research, for molding a school philosophy, for designing the school, and for selecting technology based on the purposes of the school.

No bells ring at the ACT Academy. Each day begins with agenda setting by each of the multiage classrooms. Once each student and each group of students have clarified the work for the day with guidance from their teachers, they are ready to spend the day carrying out the work. Although there are times for science labs, physical fitness, lunch, and art, the day is organized largely by the learners to meet their needs. At the end of the day, each class has a reflection period. Students and teachers sit in a circle and thoughtfully consider how the day has gone.

Entering the one-story school with its lofty ceilings and airy, broad spaces awash in light, the visitor encounters a study lounge furnished with deep couches, rocking chairs, bookcases, computer stations, and desks. Older students are working together on a project with hushed voices and seriousness of purpose. One or two young teens are at stationary computers. The school is filled with productive activity. Spacious, carpeted corridors lead to classrooms and labs. Broad entrances to classrooms provide views of students working in small groups and a few studying on their own. In one or two classrooms, students and teachers form a circle for a discussion preparatory to the next project. The entire school is quiet, yet no one asks for quiet. Everyone works all day long, yet no one stands in front of the room to demand work. Students and teachers, called *learners* and *facilitators* here, proceed about their business, yet no one needs to monitor them. The building, the light, and the daylong mutual respect, self-confidence, articulateness, and purposeful work by children and adults remind one of a study center at a private liberal arts college. But this is a K-12 public school in McKinney, Texas, where the young people are just like young people one can find anywhere else in the United States. Expectations for learners' achievement are high, chiefly because the students, parents, and community have helped to set them.

The most striking reorganization of time at ACT was the staff decision to design a 185-day, year-round school calendar. ACT teachers work a 226-day year. The staff and parents are convinced that the year-round program for students means no wasted time starting up or winding down, no long breaks for students to lose momentum and memory. The extra staff days, many during short breaks interspersed in the student calendar, are the core of professional development for ACT. There is no "off" time during instructional days.

The extra staff days, \$750 per teacher for travel, and \$1,500 per teacher for supplies and materials add up to a per-pupil expenditure of \$4,680, slightly over the district's average of \$4,500. Staff members often

pool their resources for special staff development opportunities. The decisions on these expenditures are entirely in their hands.

Thus far, the district's growing population and tax base have absorbed these extra costs without necessitating higher taxes, but any extension of such benefits to more buildings will require some ingenuity if tax increases are to be avoided. Staff development costs at the ACT Academy, however, cannot be calculated on the basis of the costs of travel or materials or workshops and conferences alone. The school defines the teacher's job as teaching and learning, for each individual and for the faculty as a whole. Professional development is not just an added, discretionary cost; it is an integrated way of improving student success throughout each working day.

A VISION FOR STUDENT ACHIEVEMENT

Every teacher in the ACT Academy is a leader, and every teacher is a member of a community of learners. In the spacious room used for staff meetings, the walls are covered with large sheets of paper that describe the collectively determined school philosophy.

Every decision made by individual teachers and the staff as a whole is made with reference to the posted, detailed analyses of what to look for when children at various ages are learning. This constant reference to what the staff has jointly devised and jointly believes about children and learning reaffirms, revises, and reconnects the school philosophy with the actual experience of the children's progress. The staff has an anchor as they and the children plan, work, learn, research, and revise.

Are the children learning? Parents and teachers say yes. Students who entered from special education backgrounds earned regular diplomas and fully demonstrated their right to these diplomas. Every year since its opening, the school has received far more applicants for each available place in this school of 250. Students send their portfolios to college admissions offices accustomed to seeing standard transcripts and grades, and students get into the colleges of their choice.

USE OF TECHNOLOGY AS A TOOL

Although the building is as well equipped as any in the country, ACT's faculty views technology as only one tool of many. Desktop and laptop computers are widely available, and students use them in many ways, from doing research on the Internet to preparing multimedia reports of their findings. There are network connections throughout the building and in the school yard. On sunny days, it is not unusual to see students clustered around a computer on a picnic table. In addition to a media production studio, cameras, and video-editing equipment, students have access to handheld devices such as laptops and scientific calculators.

But despite all this hardware and software, technology has not yet been fully integrated into the curriculum. ACT faculty and staff have only partially succeeded in weaving technology seamlessly into teaching and learning. When and how technology operational skills are mastered remain concerns. The faculty and staff are undertaking the extensive professional development needed to understand how to make the best use of technology to further academic understanding through student-designed experiences and projects.

Technology has been a catalyst for the teachers to change the content of the curriculum, their methods of instruction, and their interactions with students and other staff. Teachers encourage students to use technology to take charge of their own learning experiences, including electronic research, working cooperatively in small groups with portable technology that goes where students go, and achieving intellectual clarity about important concepts through the use of multimedia tools to present what they have learned to others. Sustained and significant professional development is essential to technology's integrated use in school.

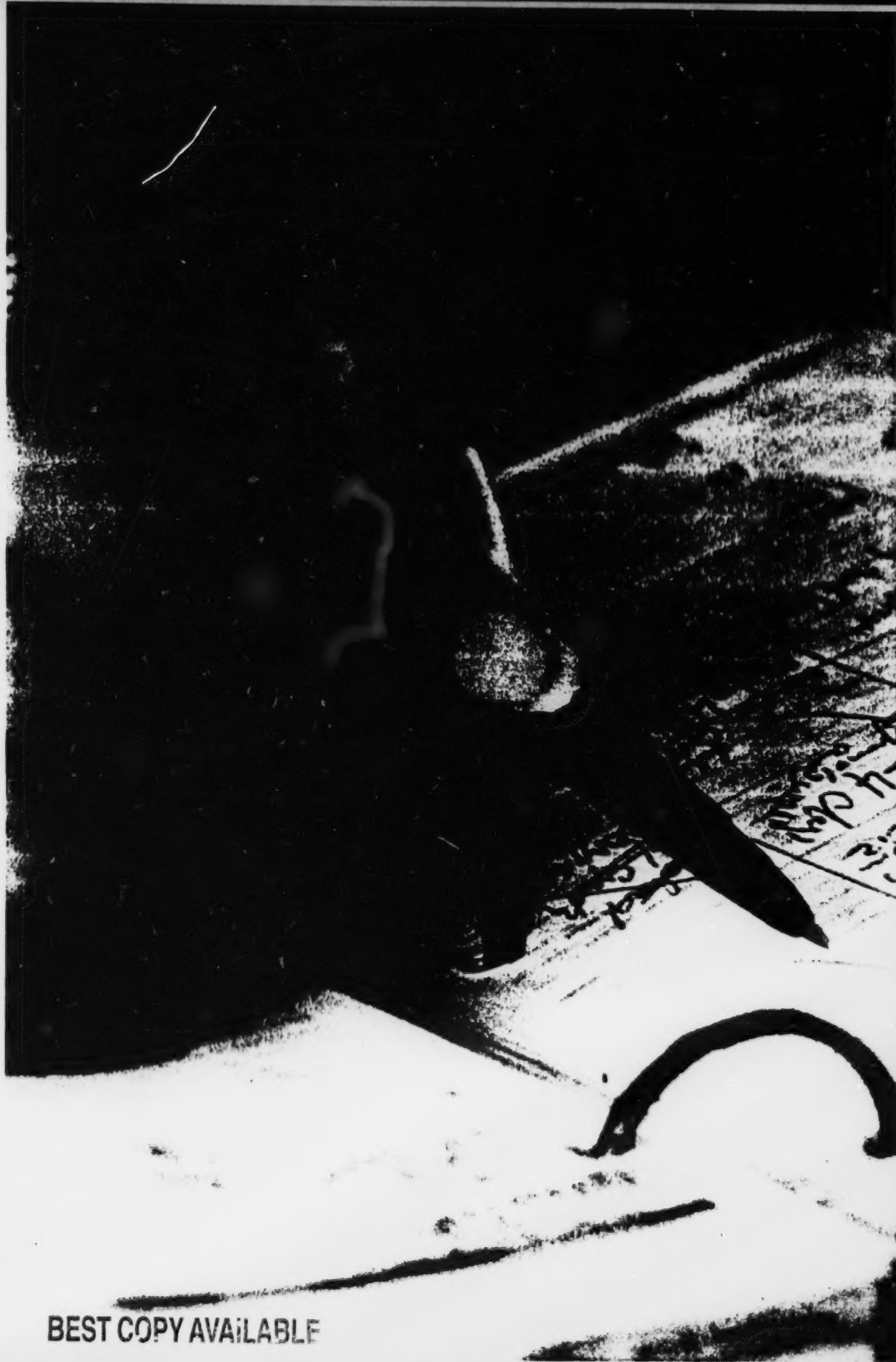
PARTNERS

The primary partners of ACT's staff are an outstanding, focused school board and superintendent, highly capable and supportive middle managers, and enthusiastic parents, joined by working partners in the McKinney Education Association, local businesses, and the higher-education community.

The academy staff stresses the need for professional growth to include parents. There are certainly dissenting voices. Not all parents and children find this school right for them. ACT's staff has intensified the preentry interview process to make sure students and parents are aware they will have to give up some cherished aspects of traditional schooling to take on the ACT challenge. The staff is also struggling to give up old habits. One teacher, Nana Hill, wrote a letter to herself listing all the old ways of teaching she intended to give up ("I will not make the students walk in a straight line"). She also gave up her old ditto masters.

The nearby Heard Museum and Austin College work closely with ACT to strengthen its higher-level science and mathematics offerings and provide on-campus mentoring for all staff.

The ACT Academy is one example of how a school has reorganized itself to support continuous learning by both students and staff. It is still exploring ways to incorporate professional development even more fully into the life of the school. Still, there is great pride in the work and learning accomplished thus far and confidence in the direction for the future. At the ACT Academy, when the lights flash as a signal to prepare to leave at the end of the day, students often sigh with disappointment that they can't stay longer and learn some more (Resta and Kennedy 1995, 76-7). As for the staff, Sue Gleghorn speaks for her colleagues when she says, "We are passionate about what we are doing."



BEST COPY AVAILABLE

II. FINDING THE TIME TO BUILD PROFESSIONAL DEVELOPMENT INTO THE LIFE OF SCHOOLS

Ask teachers what they need in order to do a better job, and the first response is always "more time." Teachers need time to prepare and equip themselves with the knowledge and skills necessary to maximize student learning. Professional development for teachers must become a seamless part of the daily and yearlong job. Teachers' learning must be accommodated by changes in how time is used throughout the school year and beyond it.

FINDING TIME

The teacher is awake and moving at 5:30 a.m. and reaches the school by 7:05 for bus duty. At 7:30, she's waiting to use the duplicating machine to run off copies of a poem she wants to give her students, but the school ran out of duplicating paper before Christmas, and no more is to be had this year. She uses the spirit master, and the poem comes out fuzzy and is hard to read. By 8:00, her homeroom students have begun to arrive. She's dealing with their problems and a stack of forms and memos from the district's central office, and she hasn't yet unpacked her tote bag full of marked essays for three of her classes. Two other teachers enter to borrow books and discuss the upcoming group meeting. At 8:25, she's calling roll; and at 8:45, bells ring for the first class. She teaches three different preparations by 11:30, monitors the hallways between classes, and worries about the phone calls she needs to make to two sets of parents. She uses her half-hour lunch break to go to the bathroom and make the calls (from the principal's office), and wolfs a sandwich in under five minutes. The parents were unavailable.

After the break, she uses her prep period for the group meeting. She and colleagues from across her grade group are trying to fit vertically designed single subjects into a unified curriculum that makes sense horizontally, the way students experience it. They try to find a way for business letter writing and short stories, a review of the Linnaean classification of species, the Civil War, and pre-algebra to

Teachers have a dilemma. They spend almost all of their school days and school year in direct contact with students, which is the way it should be. Everyone agrees that maximizing instructional time is vital for student learning. Yet it is also essential for teachers to spend time planning and reviewing student work, mentoring and observing other teachers, studying, collaboratively developing new programs and methods, honing leadership skills, and managing student learning and the work of the school.

The problem is how to find this time. When asked about their need for planning time, learning time, and group decision-making time, teachers are clear that it cannot be found within the current school schedule or by reducing time with students. The time that has traditionally been available is inadequate. Professional development after school is poor-quality time because a day spent being constantly on stage leaves one exhausted. In addition, teachers understandably wish to spend time with their own families and feel this is already heavily compromised by conferring with parents, preparing lessons, marking papers, and attending meetings. Vacation time and even school-year personal time are often dedicated to earning much-needed second income from camp counseling, summer school teaching,

and other jobs unrelated to education. (Nearly 30 percent of teachers reported summer employment, half in their school systems and half elsewhere, in *Status of the American Public School Teacher, 1990-1991* [NEA 1992, 73].)

Despite these seemingly intractable problems with finding time, teachers who participated in NFIE-conducted discussion groups and responded to the national survey repeatedly expressed the need for professional learning directly related to and usable in their work. To help students achieve higher standards, teachers need to have the time and resources—and to account for their use—that will make this work possible (National Center on Education and the Economy 1992, 5).

This time for learning is especially important as schools incorporate information and multimedia technologies into the classroom. When a school proposes to install these technologies, each teacher must become adept at their use, identify appropriate hardware and software for his or her subject matter and students, and sit down to work on the computer. Learning to use new technologies well is accomplished best when teachers have time available to learn in a variety of ways. Teachers need large blocks of time to gain initial familiarity with new hardware or software, learning and practicing for sustained periods. Time to observe an experienced user model an application in his or her classroom, just-in-time technical assistance available on call throughout the year, time to design a new hypermedia stack, or time for group reflection on a recently tried application—all recommended approaches to professional development—should be made available every day.

Several studies have already pointed out the need for time for professional development. In April 1994, an independent National Education Commission on Time and Learning (NECTL) published *Prisoners of Time*, strongly urging a complete change in how time is used in our nation's public schools to improve learning. They cited a RAND study that found that learning "new teaching strategies can require as much as 50 hours of instruction, practice and coaching before teachers become comfortable with them" and highlighted another study showing that "successful urban schools . . . needed up to 50 days of external technical assistance for coaching and strengthening staff skills through professional development" (17). A report published in the same year by the NEA (1994a) recommended moving toward an extended-year contract for all teachers, allowing additional time for instructional planning, group work, and individual study. The NECTL concurred with the recommendation "that teachers be provided with the professional time and opportunities they need to do their job"; this time is needed "not as a frill or an add-on, but as a major aspect of the agreement between teachers and districts" (36).

form a coherent whole. They don't get very far in forty minutes. Classes change. For two more periods, the teacher hands out the spirit-mastered poem, asks the students to read it, and fifteen minutes into each lesson, has the students hotfoot it to the computer lab to begin work on their own poetic responses. At 3:00 p.m. she is buzzed to the front office, where she learns that one of the parents had returned her call an hour earlier. After school, she tidies her classroom, finds several computer disks left behind by an unidentified student, counsels a young man who is six weeks behind with his assignments, and then looks in on the school magazine club's editorial session.

Home by 5:30, she prepares and has dinner with her family. But by 7:30, she's reading ahead in the textbooks for two of her classes, writing an assignment for another, rummaging in her filing cabinets for fresh ideas on how to teach business letter writing, trying to contact those parents on the phone, and marking essays. By 10:30 p.m., she's too tired to turn on her computer. She ought to catch up with the on-line writing seminar she joined several years ago after an exhilarating summer institute experience at the Bread Loaf School of English in Vermont. It's been weeks since she has felt up to it. And so to bed.

Time for paying attention to individual students, for planning and preparing to teach, for observing and assisting colleagues, for professional growth, for group work, and for individual study also needs to be built into the working day.

At present, all these activities are segregated from the daily teaching job. Professional development is set aside in a few scattered days and half days before school begins in the fall

"It's like what they tell you in the airplane: You have to put the oxygen mask on yourself before you help the child. You can't save them before you've helped yourself."

LEE HARRIS, RESIDENT TEACHER
DADE ACADEMY FOR THE TEACHING ARTS

and during the school year.

Everyone agrees that teachers need to spend considerably more time and effort to learn all year long.

Some of that time will

need to come from making new time available for teachers by lengthening their working year while students are on vacation, some from clever reorganization of school schedules, and some from teachers' willingness to devote part of their after-school unpaid time. All three adjustments will be needed if the recommended time for teachers' professional development is not to reduce student instructional hours.

MAKING NEW TIME AVAILABLE

One way to find additional time for professional development is to make new time available when teachers are in school but students are on vacation. Extending teachers' contracts into weeks when students are still on vacation is essential to meeting higher standards for all children.

An extended-year program was tried for a few years in three schools in Boulder Valley, Colorado. The experiment demonstrated that an extended block of time for staff to address needs identified by each school allowed long-range planning, intensive work, the learning of new skills, and the designing of new programs that could then be implemented and assessed during the school year. In each school, the extended year allowed major changes to take hold more quickly than when teachers attempt to study, implement, and assess changes in the midst of teaching. Current teaching practice in such cases works at cross-purposes. Teachers often describe it as being like trying to change a tire while driving a car.

Extra blocks of time can be assembled without adding days to teachers' contracts or taking time away from students. Many school districts can already find a number of days' paid time scattered in "early release" days and other noninstructional time in current contracts. Teachers can use the time far more effectively than at present if it is banked in a single, sustained, two-week annual period for intensive staff work. Two weeks is the minimum mentioned most often by teachers and administrators who have been struggling to redesign curriculum to meet higher standards, incorporate technology in instruction, reach out to parents and community partners, and conduct other major efforts to improve their schools.

A statewide poll conducted for the Connecticut Education Association by Abacus Associates in 1995 revealed that a majority of teachers favored extending the school year by one week for the purpose of engaging in professional development. Extending teachers' contracts was the first and, according to the faculty, most important decision made by the Texas

ACT Academy staff. The National Association of Secondary School Principals (NASSP) calls for extended contracts in its report on the high school for the twenty-first century (1996). The Boulder Valley experiment engaged teams delegated by their colleagues to participate in the summer work, and the NASSP suggests that districts could rotate one-fourth of faculty through the extended program each year (1996, 51). Given that time for teachers' group work and professional development can already be found in most districts' calendars, NFIE strongly recommends that all districts collect such days into a single period to be used by each staff to address the needs of the students they jointly serve.

REALLOCATING EXISTING TIME

Another approach is to make better use of time in the school year and day. A *Phi Delta Kappan* article recently reported on a school organized with four daily, eighty-five-minute instructional periods. All teachers teach three such periods and have the fourth free for study, group planning, and observation. The authors recommend that such plans be based on *student* needs (Means, Olson, and Singh 1995). There is no reason for concern that longer periods will be too much for children's attention spans. In a visit to another school where second graders had spent well over two hours on a science project, NFIE heard the children lament "Do we *have* to?" when told to clear away to prepare for gym. Students thrive when appropriate amounts of time can be devoted to certain studies. Flexibility in using time not only promotes student achievement but also uses teachers' time more efficiently and enables teachers to perform the new duties expected of them in modern schools.

Teachers and other professionals working together thrive when new learning acquired during intensive periods of study is followed up by

THE BOULDER VALLEY, COLORADO, SCHOOL DISTRICT EXTENDED-YEAR PROGRAM

In the summers of 1993 and 1994, the Boulder Valley, Colorado, district provided three of its schools with salary supplements to allow the staff members of each school to work together for an additional two weeks after students left for the summer vacation. Each school staff determined for itself how to use this time. The former superintendent, Dean Damon, pushed for this as a result of a conversation some years earlier with education reformer John Goodlad.

Edward Ellis, the former principal of Nederland Middle/Senior High School, says, "The extended contract was the salvation of the school." The school's test scores reached a nine-year high. Twelve certified teachers, paraprofessionals, education support personnel, and the principal formed a planning committee charged by the entire staff to design a study program to develop a faculty-student mentoring program, a mediation process for student discipline, and a study program to prepare faculty to use new curriculum standards and assessments. They studied Howard Gardner's writings and William Glasser's *The Quality School*, reviewed and discussed qualifications of applicants for staff openings, and worked with nearby Nederland Elementary on smoothing transitions from elementary to middle school through common academic expectations. The summer plans enabled continuing work during the school year to run smoothly. High school teacher Jim Martin says, "I see that during the school year, in-services deal with immediate concerns. With the extended time, we could do visioning in a long-term perspective. We could dream a little bit." The school's office manager adds, "We got a level of discussion you can't get in sixty minutes on a Thursday afternoon." The staff development to create the mentoring led to "adults interacting with students in different, better ways," and students were better prepared for graduation, according to a teacher. The school has become a beacon for applicants elsewhere in the district and has reduced the number of students seeking to transfer out.

At the second Boulder Valley pilot school, Coal Creek Elementary, the extended contract was used to introduce the entire faculty to computers. The intensive two weeks

allowed faculty members to work through management issues, become adept with the technology, and prepare themselves as active users of it for teaching. The faculty also consulted parents about their concerns. Teachers focused hard on their ability to teach mathematics. The school's principal says, "We wanted the kids to be mathematics thinkers. The dialogue among the faculty was key. The teachers looked at both gaps and overcoverage in mathematics instruction. We really turned around our whole approach to mathematics."

And at the third school, Nederland Elementary, a faculty decision to focus on student writing resulted in using the extended contract to revamp a writing assessment tool and to plan a yearlong faculty development program. Prior to the extended-contract program, former principal Holly Hultgren had been the only one planning and organizing the in-service days before school opened each fall. "This staff development was limited to one-time, isolated presentations given by outside consultants," she says. The extended contract allowed the participating teachers to investigate specific topics more thoroughly and share relevant information with all staff members. Staff development was planned for the entire year using the theme of writing assessment and literacy portfolios to record student progress. The following year this theme was extended to include reworking the report card format and parent conferencing process to match the writing procedures established. Hultgren says, "These efforts could not have taken place without an uninterrupted, extended period for discussion, planning, and writing."

Members of all three faculties learned by connecting with grant-funded networks of teachers and scholars: the Collaboratives for Humanities and Arts Teaching, the Colorado Partnership for Educational Renewal (part of John Goodlad's National Network for Educational Renewal), and the American Council of Learned Society's Elementary and Secondary Schools Project. They look forward to a newly forming Humanities Center codirected by school and university faculty at the University of Colorado at Boulder.

frequent and concerted technical assistance, coaching, reflection, and evaluation. In many states, instructional time is mandated by hours—and even minutes—of seat time spent per subject. But schools such as the ACT Academy measure achievement by successful demonstration of benchmark standards and completion of projects. One group of students wanted to know why they were trudging through a textbook on health. When the teacher told them the state required coverage of several more topics, the students asked to turn those topics into projects. A few days later, their projects completed, the class moved on to new learning.

Flexible use of time also encourages students' growth and initiative and breaks the tyranny of time. Learning proceeds organically *and* efficiently—indeed, far more efficiently than mechanical mandates for specific lengths of time per subject. Students know when they are done because they can demonstrate knowledge of the material, not because they have sat through a prescribed number of lessons. Students will take greater responsibility for their own work and will learn how to master time effectively if their classes are less rigid in the use of time.

Project-based education creates the freedom to work and to learn for both students and teachers. Team teaching also creates such freedom. In the younger age groups at Texas's ACT Academy, a pair of teachers is jointly responsible for forty-six children. They work separately at times and together at other times. An experienced teacher can spend considerable time mentoring a new teacher in such an arrangement; and there are many opportunities for either to prepare to teach, work individually with students, assess student portfolios, study, and carry out the multifaceted job of teaching.

The keys to the ability to work effectively as a teacher are the time and the opportunity to carry out the many necessary tasks that make up teach-

ing. Some of these tasks entail direct student contact, and some do not. These are daily and weekly tasks that begin with students and return to students, but that also require adult interaction and adult independent work.

Through team teaching and sharing responsibilities among several qualified adults, and through encouraging greater facilitation of student-initiated work, schools can improve both student achievement and faculty quality. All states should deregulate instructional time mandates as they instill higher academic standards for students. By establishing the standards, states make clear what they expect of students. By deregulating time, they allow the faculty to help students to achieve those standards more efficiently and effectively.

TEACHERS' TIME FOR INDIVIDUAL AND GROUP STUDIES

Teachers have always spent considerable amounts of personal, unpaid time preparing to teach and studying to keep up with their fields. They search out both formal and informal opportunities to learn from each other and from any and every possible source of help.

"Developing a sense of community among the teachers is essential. This requires at least two weeks' time running."

PROFESSOR OF EDUCATION

Any teacher facing five or six classes a day and repeating ninth-grade world history or biology year after year or assigned for the first time to include children with special needs in the classroom is nearly desperate for new activities and new ways of motivating and relating to their students, for new approaches and perspectives to enliven their classrooms and improve their students' success.

The state of Virginia formalizes a personal development plan for each teacher to work out with an adviser. What is present in this approach is an opportunity for the teacher to build knowledge and skill over time in reference to the current and prospective teaching assignment. What is missing from this is a broader reference to the needs of the school as a whole (Virginia Department of Education 1990).

The Virginia plan, like all state plans, focuses on the isolated teacher's growth. NFIE is concerned to balance this with schoolwide faculty growth. The first step to professional growth is agreement among the staff and the community on a philosophy and vision for students. The second step is group learning of skills, approaches, and knowledge designed to help the entire faculty implement that vision. The third step is assessing staff strengths and assuring that the school provides a balanced program for its student body. Individual study should be chosen in part to meet schoolwide needs and in part to enable the teacher to pursue individual interests and talents. External guides can help schools to assess whether they are able to offer a balanced program. Such guides should include teaching and student standards set by states and districts. No single school faculty, no matter how large, will ever be able to provide all the knowledge that students should encounter; the world is too big and knowledge has expanded too far for this ever to be possible. But faculties can and should assess strengths and weaknesses to determine priority areas for their own growth and development. Faculties then will have options for filling the gaps:

VIRGINIA'S REQUIREMENTS

In the state of Virginia, as in many other states, teachers fulfill professional development requirements for periodic renewal of their teaching licenses. Since the late 1980s, activities included in required professional development in Virginia have been expanded well beyond formal course taking to include peer observation, publications, serving as a mentor, participating in curriculum development work, educational travel, independent study, work exchange, and special projects. For each of these alternatives, criteria for successful completion are provided by the Office of Teacher Licensure, which acknowledges explicitly that this variety enables the professional to tailor learning to changing needs over the career. The entire process involves working closely with a superintendent-appointed advisor, who is not otherwise specified and who could therefore be a teacher or an administrator. The focus of study must address the subjects taught; areas of specialty or proposed specialty; methods and concepts of teaching and administration, including leadership skills; the development of children and youths; learning theory; and effective relations among schools, families, and communities. The plan of work is conducted throughout each five-year renewal period.

There are states with no such requirements; and there are states where, as one teacher put it, "Recertification? Oh, I remember. I send them the ten dollars every five years, and they send the renewal."

In a well-ordered school, relicensure should be superfluous. The kinds of professional activities listed by the *Virginia Recertification Manual* would be the normal operating procedure of the school. Virginia's emphasis on school-based work begins to shift the balance of professional development away from formal or programmatic learning and toward school-based learning (Virginia Department of Education 1990).

- They can provide opportunities for members to take on responsibility for learning the missing or weak fields.
- They can seek out new colleagues with the requisite skills.
- They can team up with community resource people from museums, the arts, universities, and other appropriate sources.
- They can use technology to access expertise.
- They can combine these possibilities.

At present, teachers isolated from group decision making have few ways of knowing what needs exist and what the staff's priorities are. Therefore, they each make their decisions about what to study and how to reach students in isolation. District-level supervisors cannot help guide individual teachers' study because they do not work with the school's children and consequently know less than the school staff about the school's needs. When faculties have time to conduct professional assessments of their own abilities and the school's offerings, teachers can step forward to plan their growth appropriately.

Today, teachers have time for intensive individual growth and learning only during vacation periods and infrequent extended leaves. Teachers no longer receive regular opportunities to take half- or full-year sabbaticals. However, in Dade County, Florida, all high school teachers are eligible to compete for forty-eight annually available residencies at the Dade Academy for the Teaching Arts (DATA), which is modeled on an idea originated at Schenley High School in Pittsburgh.

The DATA program, like Schenley High School before it, provides an opportunity for teachers to take a substantial break from full-time teaching for study of, and in, exemplary operating classrooms in the same school district. Such breaks

provide enough time for sustained individual study, but they are geared to the *individual* teacher's need for renewal and a chance to interact with like-minded professionals.

Alternatively, The Gheens Academy in Louisville, Kentucky, and the Humanitas program in Los Angeles tried weeklong visitations of *teams* of teachers to other schools to observe exemplary programs, to study, and to plan what to do when they return to their home schools. The Texas ACT Academy got its fresh start from a seven-month opportunity for the entire staff to develop the program, and it has shared its knowledge through ACT II, whereby teams from other schools visit ACT for a week or longer. In most of these cases, the team visits were funded by grants. When the funds were used up, the visits ceased.

Extended planning and review of program and teacher study require more than a few minutes snatched here and there. Sustained time must be dedicated to this purpose. Meaningful amounts of time for work and study when students are not present *also* must be a part of the daily and weekly life of schools.

DATA: CREATING A COMMUNITY OF LEARNERS

The Dade Academy for the Teaching Arts (DATA) occupies three trailers adjacent to Miami Beach Senior High School, a once-temporary solution to a large expansion in the student population brought on by enormous immigration to the district over the past decade. This influx added 120,000 to the district's rolls; and in one school year alone, 2,700 new teachers were inducted into the district. The less-than-luxurious trailer accommodations have sagged into permanence and are now "home" to DATA Teacher-Director Evelyn Campbell and the rest of the DATA family.

On a February afternoon, Campbell, a dozen teachers (known as *externs*) spending a nine-week sabbatical at the academy, and eight residents (veteran teachers who assume leadership responsibilities for the academy) crowd into one of the trailers to hear DATA resident Ellen Kempler conduct a seminar entitled "Archetypes: The Hero Within." The seminar is one of several that bring the teachers together on a regular basis to discuss ideas and compare experiences. Kempler's presentation is based on the work of Carol Pearson. It involves an assessment similar to the Myers-Briggs Type Indicator and is designed to help define personality types. It is clear that Kempler is confident and accustomed to her role of speaking in front of colleagues. Her presentation is followed by a lively conversation that questions certain aspects of her presentation and affirms other aspects. The conversation also revolves around how the materials presented by Kempler could be applied in the classroom and the advantages and disadvantages of doing so.

The people in this room have created a true "community of learners." Their vigorous enthusiasm for DATA charges the air. The chance to break away from six periods a day of teaching—150 students and no prep period, as one teacher describes the job—to reflect, to share, and to regroup one's professional life is a precious opportunity. Their concern is solely to improve their ability to serve children, in this instance by considering a new approach to broadening their understanding of, and ability to work with, diverse learning styles. They learn to think by questioning assumptions and analyzing practice. The resident teachers model such questioning; they probe the

assumptions, such as the Jungian model of psychology, on which the presenter's seminar is based. The externs have been taking notes as if the seminar were gospel. The resident teachers, through their questioning, make it clear that just taking notes is insufficient. The seminar's purpose is to engage and examine new ideas, not just accept them.

DATA offers structured, nine-week sabbaticals for middle and high school teachers in mathematics, English, science, social studies, foreign language, and exceptional student education. The academy is funded entirely by the district and serves twelve externs during each of four sessions throughout the school year. The staff of DATA includes Campbell, who is teacher-director of the academy; twelve adjuncts, fully credentialed teachers who assume the classroom responsibilities of the externs while they are away from their home schools; and the eight residents, experienced teachers with master's degrees who have reduced course loads at Miami Beach High and who provide guidance for the externs and coordinate the workshops, seminars, and classroom observations that accompany the sabbatical experience.

DATA aims to stimulate lifelong learning, teacher leadership, collegiality, professional self-esteem, action research, and efforts to solve educational problems. At the heart of the DATA experience is a research project designed and conducted by each extern with assistance from DATA residents. The quality of the research proposal is one of the criteria for admission to the academy. DATA externs have completed reports on topics such as "Strategies for Teaching Mathematics to Low-Functioning Learning-Disabled Students," "A Teaching Approach to Gabriel Garcia Marquez," and "Computer-Assisted Instruction for Haitian Students."

Externs are free to design their own program of study. The DATA experience is an opportunity for externs to "plan their own destiny," says Campbell. They find this very difficult during the first week of the sabbatical but become more accustomed to directing their own learning in subsequent weeks.

The freedom of inquiry and experimentation built into the academy troubles many district administrators. "People want to know where we are all the time," said one DATA resident. "We are professionals. We can be trusted. We've been held with the fire at our feet over this program." DATA is an invaluable opportunity for renewal for these teachers.

RECOMMENDATIONS

FIND THE TIME TO BUILD PROFESSIONAL DEVELOPMENT INTO THE LIFE OF SCHOOLS

Teachers spend almost all of their school days and school year in direct contact with students. This time is precious and should not be reduced. Yet time for teachers to plan and review student work, mentor and observe other teachers, study, develop new programs and methods, hone leadership skills, and manage student learning and the work of the school is essential to good teaching in the classroom. Some of the ways to find time for this work include the following:

1. FLEXIBLE SCHEDULING

Reorganize time in the school day to enable teachers to work together as well as individually both daily and weekly and throughout the year.

2. EXTENDED SCHOOL YEAR FOR TEACHERS

Redefine the teaching job to include both direct student instructional time and blocks of extended time for teachers' professional development. Extend the length of the school year, allowing for up to four weeks for teachers' professional development while students are on vacation. Organize the teachers' year to include intensive, sustained study by staff as determined by school-based decisions directed toward increasing student learning. Intensive study should be supported by yearlong follow-up.



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III. HELPING TEACHERS TO ASSUME RESPONSIBILITY FOR THEIR OWN PROFESSIONAL DEVELOPMENT

Teachers in the past have exercised little control over their professional lives. In today's effective schools, however, teachers make important decisions about their teaching and the life of the school as a whole. Teachers' responsibilities have grown beyond the isolated classroom walls to embrace the success of all children and adults who work in the school. Teachers are assuming a greater role in their own professional development and that of their colleagues. Enhancing student learning entails constant improvement in teaching and expanded roles for all teachers, including peer assistance and review.

ACCOUNTABILITY

The school is the unit of focus for improving student achievement. When school staffs assess their needs and make group and individual decisions about what they need to study in order to provide a balanced curriculum, assess students, manage the school, or improve interpersonal skills, they will need to devise study plans for their own learning and evaluate the effectiveness of the plans in reaching specified student learning goals. Study and the results of study as measured by changed teaching practice and improved student achievement must be closely linked and reported to the public. A variety of professionally developed standards are now available, or will be shortly, to enable teachers to measure the effectiveness of their professional development:

- Standards for high-quality professional development are available to guide school staffs in their decisions. Schools staffs engaging in learning should refer to standards developed by specialized associations such as the National Staff Development Council.
- Standards of professional practice that can be used as references include those for beginning teachers and those for advanced practice. The Interstate New Teacher Assessment and Support Consortium (INTASC) and the National Board for Professional Teaching Standards currently have such standards in place or under development.
- Measures of student achievement can be referred to after a suitable period of time has enabled implementation to result in changed practice and for changed practice to show student results. At least two years of focused professional development for teachers should elapse before student results can be expected to be measurable. Measures can include

student subject standards or, in the case of goals concerning interpersonal relations, formal evaluations of reduced conflict, higher attendance rates, or other appropriate changes. Evaluations of interpersonal relations should be conducted independently. Parents and members of the community should be fully informed about student goals and, where appropriate, invited to assist in setting them at the start. Teachers should also help parents and the community understand appropriately chosen accountability measures.

- In a few cities, teachers have also devised peer assistance and review programs. All teachers should include peer assistance in their expanded jobs. Peer assistance and review enable trained teacher mentors to assist teachers who are not performing well to improve or be counseled to leave the profession.

Measures such as these are essential to guaranteeing high-quality instruction and improving student achievement.

TEACHERS AS LEADERS

Billie N. Hicklin, a seventh-grade teacher in the Parkway School of Boone, North Carolina, was one of the first teachers to participate in the pioneering National Board Certification (NBC) process. Developed by teachers and subject specialists, NBC is a rigorous examination of what a teacher knows and can do. As Hicklin relates, it is also an opportunity for the teacher to learn and grow:

The very best professional development experience I have had was completing the process for National Board Certification. Notice I said completing the process, not achieving it. I did achieve the honor of being in the first group of NBC teachers, and I was honored to be hosted at the White House by the President. However, the professional growth I experienced occurred months before I got the news about certification. With the goal of improving student learning paramount to everything else, the process of trying for NBC affected my teaching more than anything else ever has. The reflection that was called for throughout the process of videotaping my classroom in action, following selected students' writing progress over time, exploring the way my students respond during a literature discussion, and documenting my days throughout a three-week unit was reflection that, frankly, I had never done before in my career. This process provided me a structured avenue for doing that, and it is phenomenal the way it has changed the way learning takes place in my classroom. The NBC process is a rigorous one, and it is directed toward teachers' intellectual development as no other professional development ever has been. It fostered a deepening of subject-matter knowledge and a greater understanding of my students' needs as I read avidly to learn more about the nature of the adolescents we teach. . . .

. . . I teach now with my students more at the center of what I do. I spend time regularly reflecting on what I do and why and what I can do to make learning better and more real for my students. I collaborate more with my colleagues and my administration as I realize what a community of learners really is—we all have so much to learn from each other! I am more of a risk taker now, realizing that we won't improve if we

wait for someone else to come in and tell us what works for kids. So I am now seeking new ways to teach concepts and blending those new ideas with ideas of my own that have proven successful. I am including all the technology we have available as tools for learning. I am sharing with my school and district administration as well as with my [students'] parents as I try new ways to help kids succeed, for there is no real motivator except for success [and student] achievement.

The national teaching certification process described by Hicklin is based in part on the profession's own standards for the highest level of teaching performance. Teachers who volunteer to measure their performance through NBC are being recognized by peers, districts, teachers' organizations, and states as leaders and models to be emulated.

Yet teachers are rarely given such opportunities to exercise leadership. Experienced teachers who could take on leadership roles continue to carry out the same job as novices. Indeed, many of the 268 teachers who have received NBC and the hundreds more who have voluntarily undertaken the lengthy and challenging national certification process to date are all dressed up with nowhere to go. Nationally certified teachers may be first among equals but as yet have few recognized positions from which to lead peers. For the millions for whom NBC is not yet available, years of work, learning, and development of expertise have left excellent veteran teachers much where they started: carrying out day-to-day work assignments that do not in any essentials differ from those they had at the start of their careers.

Finding incentives for all teachers to strive throughout their careers to attain deep knowledge and skills and to master their craft is an issue that many have struggled to resolve. Merit pay schemes that tie pay to performance have been spectacularly unsuccessful. Formal recognition of leadership in teaching remains an elusive goal. Leadership is a professional development issue because finding equitable ways of rewarding those who learn and are therefore prepared to lead can become a major incentive for all teachers to incorporate rigorous learning in their work.

A few leadership positions do exist for a small percentage of teachers, such as secondary school department chairs; elementary grade or grade group leaders; specialty positions leading honors programs or arranging class scheduling, athletic coaching, student club and extracurricular leadership; and temporary assignments for peer coaching, curriculum development and assessment, and so on. Most of these are compensated with small stipends and added to regular teaching assignments. A few are compensated primarily by reduced teaching assignments. The number and availability of such positions vary from place to place, but the primary faculty leadership positions providing time and opportunity to work with colleagues (department heads and grade leadership) are available to very few teachers. In secondary schools, once positions are attained, they usually remain in the same hands until the incumbent retires.

Teachers are convinced that valid and useful leadership should be rooted in the classroom and strongly linked to the needs of students in each school. This conviction is not merely a manifestation of teachers' adversarial relation to management; it is a positive understanding that leaders must be capable of addressing student and faculty growth and that therefore direct experience in cultivating this growth is essential.

The National Council for Accreditation of Teacher Education (NCATE) has proposed a "continuum" of development for teachers that provides a career-long set of quality assurances,

from recruitment to college degrees and internships at the earliest stages to state licensing through extended clinical preparation and assessment, continuing professional development, national assessment, and advanced certification in successive stages (NCATE n.d.). At present, the national certification process, although it can take up to two years to complete, is the only available goal for teachers' growth between initial licensure and retirement. More incentives to study, gain expertise, and use that expertise are needed throughout the career. To provide continuing incentives and opportunities to rise to leadership challenges, most teachers should have opportunities to fulfill leadership roles. We need a host of leadership roles because we now expect every teacher to fulfill all teaching roles with equal expertise. In the words of Nobel physicist and education reformer Kenneth Wilson and coauthor Bennett Daviss (1994, 81), it is as if we expected one person to do all the tasks necessary to flying a jumbo jet, to be the "pilot, . . . design engineer, mechanic, navigator, chef, and cabin attendant" and, one might add, to do it in an aircraft cobbled together from pieces of a Conestoga wagon, a Model A Ford, and a Betamax video recorder.

Being a teacher means fulfilling multifaceted roles, and teachers themselves, parents, and the public expect teachers to fulfill all these roles well. But to do so, teachers also recognize the need to gain different kinds of deep and specialized learning at different periods of their careers, both in response to their individual promptings and in response to the needs of their schools.

Consider pedagogical and subject-matter knowledge. Secondary school teachers are more inclined to join specialized associations than teachers at the elementary level are (Abacus Associates 1995, 21). The NFIE survey and other studies show that at the high school level professional growth *means* staying current in one's field far more often than it does at the elementary level. Yet the intensifying move to higher subject-matter standards for students presupposes deep familiarity with the subjects among elementary and middle school teachers and a heightened ability among high school teachers to reach all students. The subjects for which high standards are being developed by specialized associations include English, mathematics, science, American and world history, geography, civics, foreign languages, the arts, and health and fitness. For each subject, rigorous standards are being proposed for the elementary and middle years as well as the high school years. Only the arts, health and fitness, and foreign languages are currently specialty teaching jobs in most schools and states at the elementary level. No individual elementary teacher should be expected to gain depth of understanding in all the core subjects, but each school staff should strive to assure a *balance* of available expertise in all these subjects among the faculty as a whole. Leadership in each subject, opportunities to gain depth of understanding, and opportunities to share that understanding with students and other faculty members are essential to accomplishing this objective. Some teaching specialties, such as art, music, and physical fitness, should remain in the hands of specialized teachers. Other specialties that pull students out of regular classrooms, such as reading, should be restored to classroom teachers who have deepened their study of the field. New, expanded roles in science, history, and other fields should be added as local schools review their faculty expertise.

At the high school level, departmental divisions of subjects result in a fragmented and sometimes incoherent daily experience of the curriculum by students. Schools experimenting

with interdisciplinary approaches and project-based learning are attempting to overcome this lack of connectedness across subjects, where what happens in first-period science has no relation to second-period mathematics, or where fifth-period English is completely isolated from sixth-period history. Missing from the high school cafeteria of courses are opportunities for subject specialists to get together across each grade level, as they do in elementary schools, to devise coherent curricula. Department heads sometimes do this. Montgomery County, Maryland, for example, provides a full week each year for the different subject leaders within each school to work together, another week during which all the district's subject leaders work together by field, and two weeks of independent work for each leader to use at discretion (textbook inventory and "cleaning up" being major realities for most).

Grade or grade group leadership in secondary schools and subject-matter leadership in elementary schools are two extensions of existing leadership roles. Both should be present in all schools, and both should be available to more teachers. Such roles could become more available if they were perceived as positions for a specified number of years, renewable at the behest of the staff.

An abundance of leadership roles would provide more opportunities and incentives for teachers to prepare themselves for leadership by deepening their knowledge and ability. For example, sixth-grade teacher Marilyn Matosian, from Walnut Creek, California, writes:

In July of 1991, I left my comfortable life in the suburbs of Northern California to attend a three-week summer institute at UCLA. Never in my wildest dream did I realize the profound difference this would make not only on my professional life but on my personal life as well.

I felt so privileged to be one of twenty-four teachers from throughout California to be selected to attend this Technology Academy. In the three weeks, I attended lectures and learned from UCLA professors and other practitioners. In addition to the lecture format, I experienced hands-on training from manufacturers of the latest technology for education as well as being exposed to research firms that were tracking technology in the classrooms. Another bonus to my participation in the program is the fact that I met twenty other dedicated, committed professionals, whom I continue to call to discuss educational issues. They are my network and daily inspiration.

After attending the academy, I was tapped to be one of ten coaches (Teacher of Teachers) for the California Middle School Demonstration Program. While involved in my coaching duties, I have learned additional teaching strategies, especially for the diverse student population in California. The quarterly meetings of the middle school coaches, all fellows from the California History Project, enable us to collaborate and review current educational research and teaching practices and share ideas and experiences from these demonstration schools. This group of middle school teacher leaders has grown to twenty-one in the past two years.

Finally, of course, in addition to this statewide involvement, I have my regular sixth-grade duties of teaching integrated history and literature. At my present school site, I am the leader of the sixth-grade core instruction helping seven other teachers to implement change and reflect on student learning and assessment using the excellent training that was made available through such programs. The key is to apply the new strategies on the front line and to improve student performance.

Teachers who have developed expertise, as Matosian did, are recognized by their colleagues and asked to provide leadership for the rest of the staff. NFIE recommends extending the number and variety of such leadership positions in order to assure the presence of all needed expertise on each staff and to encourage individuals to take responsibility for leading colleagues in their work in one or another of the needed areas. The long-range goals are for each teacher to study deeply in a succession of special areas throughout the career and for all teachers to add special depth to the schoolwide standard of high-performance teaching and learning.

This recommendation grows directly out of NFIE's experience in promoting teacher leadership nationally. The Christa McAuliffe Institute for Educational Pioneering was established when the January 1986 Challenger disaster prompted scores of donations to the NEA in McAuliffe's name. The institute sought to preserve her legacy of creativity, adventure, and promise by enabling teachers to take the lead in shaping education. Each of the more than 100 awardees over the years studied, networked with colleagues, and implemented changes in practice dedicated to raising student achievement, using technology, and addressing issues of diversity in the classroom. Evaluations repeatedly showed this program increased teachers' efficacy, professional stature, and leadership ability and consequently increased students' and colleagues' achievements (Carlson 1990a; Christa McAuliffe Institute Task Force 1992).

The larger question to be addressed is how the institute experience can be extended from a few teachers to all teachers. The answer lies in the need to assure that every school has knowledgeable leadership in a broad array of areas. In addition to grade and subject leadership, new assessment methods, in all their complexities, cannot be learned on the fly or from a workshop or two; they require deep, extended learning and practice. Introducing technology effectively into the schools will demand a variety of specialist roles, from advising on hardware and software appropriate to subjects and age levels, to searching out databases in each subject and Internet-based resources for the classroom, to monitoring and facilitating on-line discussion groups for students and teachers. Many of these roles should be conducted from inside each school, and they differ sufficiently to provide opportunities for teachers with different talents and interests to step forward to fulfill them.

Fully 84 percent of teachers responding to the NFIE survey agree that "[ensuring] that all schools have appropriate teacher specialists, such as technology coordinator or business and cultural community outreach coordinator[s]" is a priority. Teachers also believe that such expertise should be well rooted in the classroom and fulfilled by active full- or part-time teachers.

Teachers are telling us that love of teaching and working with young people are the prime motivations of their careers. They want leadership from their own ranks, and they want to be leaders without leaving those ranks. This is why we do not advocate a "career ladder" or permanency of tenure for any specialized role. Instead, we favor opportunities in each school for the staff to assess its needs for a broad array of possible special roles, to have a substantial voice in preparing to fulfill such roles, to volunteer to serve, to elect leaders, and to be able after a period of years to renew or change those leaders for another term.

Each school community, consisting of teachers' organizations and specialized professional associations and their partners, such as principals' associations, education researchers, and museum and university partners, should define a broad array of teacher leadership roles, from subject and grade or grade group leaders to technology coordinators and business and cultural

liaisons. Having selected the appropriate leadership roles, teachers and their partners can devise professional development directed toward fulfilling them. School staffs should also have considerable authority on *how* they wish each leader to fulfill the tasks assigned so that they can invest each leader with the authority to carry out the work and commit the staff to cooperative efforts to carry out the leader's vision. Care needs to be taken in defining new

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roles for teachers in such a way that other teachers understand they cannot completely cede their responsibility for the special area of expertise to the teacher with the title; nor should teacher leaders merely replicate bureaucratic behavior in miniature. Such concerns will have to be addressed in delineating leadership roles and the responsibilities of both leaders

and followers for incorporating leaders' new learning throughout each faculty.

Gerald Ott, the executive director of the New Iowa Schools Development Corporation, a school improvement and leadership development consortium, reminds us that "if teachers are going to enter this leadership realm, they need some of the same tools that traditional leaders have—that is, telephones, time to think, interaction with adults." More teachers need opportunities to cycle through leadership, from preparing to lead, through study, to leadership for a term or two, to cultivating their successors, and back to the next loop on the spiral to learn something new. They must have time to lead, and their colleagues must have time to follow.

The "spiral," rather than the "ladder," is NFIE's recommended metaphor for teachers' growth and development. Career ladders, as recommended by the Carnegie Forum on Education and the Economy, implied by national certification, and tried out for a time through merit pay programs, are modeled on a metaphor of continuous, linear improvement throughout the career, leading to "master teacher" apotheosis. Some aspects of teaching may grow simultaneously and continuously through length of experience and accumulated learning. But the very large number of new demands on teachers means that midcareer teachers will choose to be novices from time to time, as many do at present in the face of technology, when their juniors might be better able to lead. New graduates will bring with them current information in the arts and sciences; experienced faculty might decide to take up a new language the better to communicate with an influx of recent immigrants to their school. Cycling leadership from hand to hand and spiraling upward through the career are important for keeping teachers' and students' enthusiasm high, for introducing new ideas, and for providing opportunities for all to excel.

Faculties should assess leaders for their effectiveness in bringing new or external learning resources to the school, for changes in teaching practice of both leaders and colleagues, and for student achievement in relevant curricular areas.

It may seem odd that a long discussion of teachers' roles as school leaders has left out the principal. Yet the term *principal* originally meant principal teacher, and the duties included providing instructional leadership for all staff. This is one area where harking back to the nineteenth century may be desirable. One of the reasons for the scarcity in teacher leadership roles is that when teachers do develop expertise, they are often promoted out of teaching to administrative positions. To become a leader has generally meant leaving the classroom for full-time principalships or curriculum, assessment, and supervisory roles in central district offices, rarely to return to teaching. The goal should be the opposite: to build incentives for growing and remaining in the classroom. When NFIE conducted its national survey, the teachers of America were quite clear on a major policy recommendation: 74 percent of teachers and 84 percent of teachers' organization leaders agreed that instructional leaders should "have periodic and regular classroom teaching experience." They further agreed (63 percent of teachers and 71 percent of teachers' organization leaders) that "all school administrators [should] return to the classroom at regular intervals" (Figure 5).

In a recent report, Anne C. Lewis writes, "Good principals clear out the debris in front of teachers, know what's ahead, help map out the march, get the resources, and monitor the progress. They don't bark orders" (1995, 41). Professional development to help principals learn how to do all this (and many other administrative, parent, and community duties) "apparently is an even lower district priority than quality teacher development" (43). The first order of business for teachers' professional growth is to ensure that the principal and all support staff are an integral part of both the decision making and the learning endorsed by the school. The principal should

WEDNESDAY AFTERNOONS AT NEWPORT HEIGHTS ELEMENTARY SCHOOL BELLEVUE, WASHINGTON

It's 12:50 on a sunny April 1995 afternoon at Newport Heights Elementary School in Bellevue, Washington. But because it's Wednesday, the students board the school bus and head home or to day care arranged by their parents. The staff members still have work to do, however. For the next two hours, they will engage in well-prepared and productive staff development as an entire faculty. Among the group are several young and eager student teachers from the University of Washington, who engage in the afternoon's activities as full and equal partners. Also on hand is Dr. Jill Matthies, the determined, energetic principal of the school, who facilitates the weekly session.

Dr. Matthies has been Newport's principal for nine years, and she has worked very hard to cultivate the climate of leadership and professionalism that pervades the school. "We have an incredible staff," says Dr. Matthies. "They are knowledgeable, reflective, and sharing. . . . All the adults in the building appreciate each other's strengths and hold a common vision for the students."

Dr. Matthies sees her primary role as that of staff developer for her faculty. "Everything I do is tied to instruction and helping teachers. I'm a facilitator of learning for adults." She believes that staff members should "have a great deal to say about setting goals for the school" and that the professional development activities designed and undertaken by the staff form an integral part in helping to reach these goals.

Like other schools in Bellevue, which is an NEA Learning Lab district, Newport Heights uses site-based management. This has been the case since 1986, when, led by the Bellevue Education Association (BEA), the district added a section to the contract calling for school-based decision making. This emphasis is designed to have teachers "take charge of change" by working with each other, parents, and administrators to improve student learning.

Back in the Newport Heights library, the teachers break into small groups to continue their work of the past few months on portfolio assessment. Like their students, the teachers and the principal are also keeping portfolios. This, as one second- and third-grade teacher explained,

"helps us to understand what students are experiencing when they select and review materials in their portfolios."

Each group is directed by a team leader who is also a teacher. The teachers in the group share their work on student portfolios—successes as well as problems. They ask tough questions of one another about approaches and techniques and suggest ways to explain to parents how portfolio assessment provides an in-depth evaluation of student progress and achievement over time. Some teachers say that they invite parents to select materials for their children's portfolios. Others have encouraged students to include in their portfolios work they have completed entirely at home. They take notes about one another's work and consider strategies they have learned individually at outside workshops. Each brings something of value to the group, and each participates fully as a member of a learning community.

After the small-group session, the faculty reassembles to critique a dissertation chapter by a doctoral candidate who has conducted research at the school. Discussing the chapter gives the teachers an added opportunity to reflect on their experiences and gauge their progress since the research was conducted.

The author of the dissertation has been helping the staff with portfolio assessment. She is one of a number of "critical friends" of the school on whom the staff draws as an ongoing resource. The staff members became acquainted with other "critical friends" through the school's participation in the Puget Sound Education Consortium. Although the consortium is now defunct, the Newport Heights staff remains in contact with those formerly involved in the project.

At 3:30 p.m. the session ends. Many staff members linger in the school library to continue discussions started during the meeting.

The site-based mechanisms for decision making, including a Program Delivery Council and a School Improvement Team comprised of teachers, parents, and administrators, were instrumental in getting parents behind the Wednesday early release idea. These mechanisms give credibility to local decisions and help parents understand that teacher time used for purposes other than direct student instruction is time well spent.

Also crucial to the success of Newport Heights has been the districtwide involvement of the BEA and its executive director, Michael Schoeppach. "When we changed the contract language in 1986 with regard to

conceive of the job as dedicated to improving instruction. In the words of Gerry House, superintendent of the Memphis City Schools,

"Conventional wisdom says that principals must be lead teachers. The fact is, teachers can take the lead. We need teachers to become leaders and principals to be leaders of leaders."

Appropriate professional development for principals is beyond the scope of this report, but it is essential to effective leadership of teachers. As teachers take on more responsibilities, they take on management and leadership characteristics. Complementary changes in the principal's role must take hold at the same time.

EVERY TEACHER A COLLEAGUE

The storehouse of knowledge that 3 million public school teachers hold is the public schools' single greatest, least-tapped resource for improvement. Teachers who responded to NFIE's survey and discussion groups reported that such collegial opportunities to learn happened once in their careers, at best. Many could not identify such experiences at all.

The examples we have described have all involved group learning and decision making by teachers in a school, an atmosphere of trust and willingness to ask for help from colleagues, and regular interactions among staff to create and reaffirm their shared philosophy of children's development and approaches to encouraging student achievement. The kinds of multifaceted roles and leadership opportunities we recommend depend on such a positive, trusting, teacher-directed, team effort to learn from and with each other. Teacher leadership goes nowhere in a traditional school. Only adequate time, trust, and authority can enable colleagues to seek each other out, to learn together, and to act on their learning.

Although a principal and other district leaders can do much to foster such mutual trust through genuine devolution of power to each school staff, teachers' organizations are key partners in the creation of genuine collegiality. Michael Schoeppach, of the Bellevue (Washington) Education Association (BEA), took the lead in fashioning a contract that endorsed site-based decision making and the professional development that members needed to create the collegiality seen at Newport Heights Elementary. The teachers' organization, a helpful contract, a good principal, and involved parents all supported the central, collegial work of teachers.

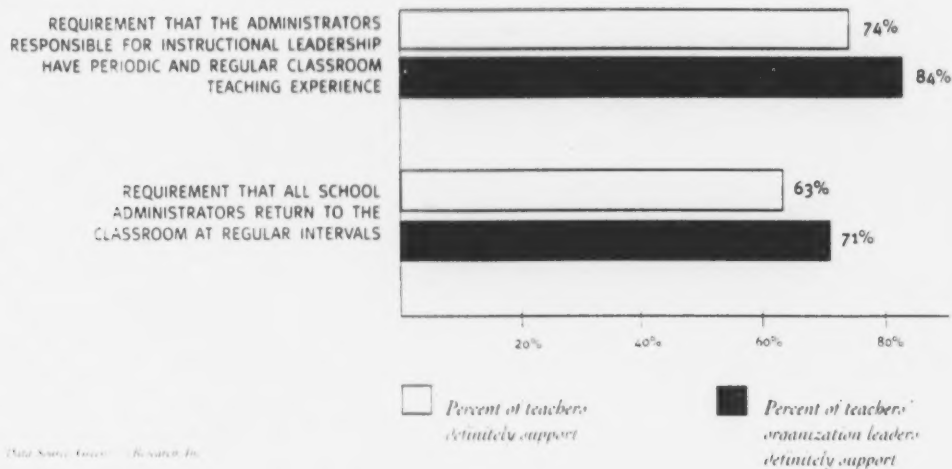
The unit of change and action for higher achievement by students is the school. Teachers responding to open-ended NFIE survey questions repeatedly referred to the experiential, day-to-day work of teaching as, in and of itself, their primary source of professional growth. A majority of surveyed teachers (63 percent) see collegial assistance as an important, career-long part of the job. Some referred to team teaching. Mentoring of younger teachers was mentioned as often as being mentored. Discussions with teachers' organization leaders also brought responses that linked professional growth to collegial work embedded in the daily job.

E. Lea Schelke, NEA director from Michigan, where she is a high school language arts teacher, reported her most effective professional growth experience as the time when the "faculty of a seventh- and eighth-grade junior high school designed an open-space, cross-discipline curriculum for a sixth-, seventh-, and eighth-grade middle school. Parents, community, middle school students, and college professors were engaged in the two years of planning, two years of building the new school, and four years of successful implementation." Schelke thinks of this work as excellent professional development "because it was designed, facilitated, implemented, and assessed by teachers and administrators working cooperatively with the community and higher education. It inspired me to continue studying the power of teachers' involvement in curriculum design and . . . decision making for completion of my doctorate at Wayne State University. A continual change process is embedded in the experience. The program still operates." Schelke attributes the success of this effort to the daily work *plus* work conducted during six- to eight-week funded summer workshops, the joint higher education and school faculty focus on helping children learn, the inclusion of students' wishes for what they wanted in the new building, and the cross-disciplinary work with all colleagues from both levels and in all subjects.

Schelke defines professional growth, not as a single activity or set of activities such as the summer workshops, but as a long-term, collaborative experience where community, students, pre-K-12 staff, and professors are all partners. In a discussion group held early in the development of this report, Marsha Levine, director of the Professional Development Schools Project

site councils," said Schoeppach, "it became apparent that we had to be involved in staff development around that initiative to address council needs. We worked with schools and Program Delivery Councils on consensus building, conflict management, and group dynamics."

The ultimate rewards of this collaboration among teachers, their association, administrators, and parents far outweigh any difficulties encountered along the path to school improvement. "I think our school is fabulous," beamed one Newport Heights teacher. "We have gotten where we are because of Wednesday afternoons. You cannot be given new programs without time to talk with your colleagues about how to do them. Bottom line, the time we spend with each other means that things are better for the students."



(Data Source: *Source: Research, Inc.*)

for NCATE, described this kind of professional growth as an *ethos*—a culture, a set of habits—not just discrete programs or activities. In looking for exemplary schools where the professional growth of teachers is a vital feature of success for students, and in asking teachers what had most helped them learn in their careers, such seamless integration of learning and working was highlighted. What teachers want out of professional growth is the ability to *use* their learning in school. Cheryl Lake, NEA director from Muskegon, Michigan, and currently an educational consultant for the Orchard View School District, described a one-week program on integrated thematic instruction as her best professional development experience, which she values because she participated in the program with her teaching partner. Together they developed a unit during the week-long session and subsequently implemented the new curriculum in a third-grade, team-taught, inclusion classroom. The two teachers “continued to refine and modify the yearlong unit . . . [over] the next six years. We developed our own curriculum,

which meant we also needed to learn to do research as we developed the unit. It caused positive changes in our classroom and definitely changed our teaching to meet the learning capabilities of all students.”

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The original one-week professional development program was a very important feature of this result, but the proof of the growth and transformation came over six years of collegial practice and continuing learning and revision.

Teacher Tom Morris, president of the Renton (Washington) Education Association, told us about “a three-year staff development project that was site-based.” All primary teachers from the school participated in three days of joint learning, and all received follow-up observations and feedback. What made it valuable to Morris? “We participated together as a staff. It was ongoing. It was matched to what we needed in our school.” And Sheridan Pearce, a teacher in Germany and an NEA director from the Federal Education Association, remembers a program because “teachers were helping teachers to improve. It opened the profession up.”

Mary Hatwood Futrell, dean of education at George Washington University and former president of the NEA, summarizes the research literature that supports what classroom teach-

ers such as Morris and Pearce know in their hearts: "Professional development is most satisfactory to the individuals involved when it is based on the needs of the professionals in the school and when it is delivered in the school" (Futrell et al. 1995, 23). In a five-year study, the Center on Organization and Restructuring of Schools found that student learning improves in schools where teachers work and learn together, and that such collaborative teaching and learning are linked to increases in student achievement (Newmann and Wehlage 1995).

At present, however, two-thirds of America's teachers feel they have little say in what they learn on the job (U.S. Department of Education, Office of Educational Research and Improvement 1994). Such learning can be part and parcel of the daily work, such as teachers sitting down together to review student portfolios. Beverly Hoeltke and Carol White, Christa McAuliffe Institute participants and teachers at the Key School in Indianapolis, report the team "comes together" around the students' work. The "answers are in the relationships [with colleagues]" (Einbender and Wood 1995, 24). At Brushy Creek Elementary School, an NFIE-funded site in Taylors, South Carolina, groups of teachers sit down daily to share ideas, develop curriculum, and create portfolio assessment procedures. Through what they call "the Brushy Creek way," faculty members learn constantly by developing materials jointly with students, customizing instruction and assessment, and integrating technology into classroom work (Rockman 1995a). Isolated teachers know they run the twin risks of either getting stale or burning out with single-handed efforts to search out the answers.

The learning that teachers need from each other is learning that continues throughout the day, the school year, and the career. It is constant improvement of practice based on observation, feedback, reflection, evaluation, and concerted

ELEVEN CENTURIES OF EXPERIENCE

At Sweeney Elementary School in Santa Fe, New Mexico, the staff had begun a series of talks with the principal about how to improve the school, but he left to take another job. Despite all the remedial programs in the school, the students were not prospering; and despite all their hard work, the staff felt frustrated. The superintendent encouraged the staff to consider what they wanted in a new principal. In the course of one of their meetings, the staff realized they did not want a "principal"; they wanted a different kind of leadership. They began by analyzing what needed to be done. The list of tasks coalesced around six general functions: making sense of the K-6 curriculum, maintaining student records, handling expenditures and budgets and ordering and supervising supplies, organizing peer evaluations, looking after the physical plant, and taking responsibility for all legal and statutory obligations.

Sweeney first-grade teacher Sandra Sanchez Purrington had taken all the course work preparatory to becoming a principal but lacked the certificate. The staff asked her to become their lead facilitator, taking on the legal responsibilities. Four other teachers were elected to take on the management team positions of physical plant, academics, executive secretary, and evaluation. They took their plan to the superintendent, who saw that the staff had done its homework. The plan met all state regulations. He told them if they could get state and parental approval, he would back them when it came time to get school board approval. The state saw no problems, and the parents knew the staff and trusted them. But one school board member said that he did not know how a bunch of teachers could know enough to run a school. Sanchez Purrington did a survey of the staff and went back to the school board. She told them the sixty-two staff represented a collective eleven centuries of experience in working with children. With that—and a boardroom packed by all the parents, the local NEA affiliate, and the backing of the other principals in the district—Sweeney's staff got the board's approval.

The \$7,000 differential between Sanchez Purrington's teacher's salary and a principal's salary was divided among the management team. The four team members worked additional hours for the stipends on top of their

regular teaching schedules. Only Sanchez Purrington, as lead facilitator, was out of the classroom. All five were elected for two-year terms. Among them, they provided one and a half full-time-equivalent administrators. This management team met weekly along with two parents elected to join it. All parents were welcome at the school at any time and were in the classrooms constantly.

The staff agreed on a philosophy and worked to make everything they did adhere to it. They had monthly professional development sessions. Sanchez Purrington's job was to act as a resource to the staff. She would search out new ideas and resources, but staff members would do the research and presentations. The parents were invited to all workshops, and there were special workshops on parents' issues that responded to parent surveys of needs. Faculty lunch periods became daily, upbeat professional development sessions. "Being in need of help was no longer dangerous," says Sanchez Purrington. She attributes this to the peer evaluation system. Every staff member had an evaluation team for the full year, including one grade-level colleague the teacher chose from whom he or she wanted to learn and who evaluated instructional appropriateness; one randomly chosen staff member who looked at how the teaching fit in with the overall program of the school; and the lead facilitator, who took responsibility for the state's requirement for evaluation. Each team member visited the teacher's class singly, and all members together would have a conference with the teacher. "These conferences were couched in a completely positive mode. Teachers found them not just productive but even exciting professional sessions. Everyone worked to produce even negative messages in positive ways," says Sanchez Purrington.

When visitors came to the school, anyone on staff might be found making formal presentations. And anyone could and did present the school's philosophy passionately. Professional development had been woven into the fabric of the school because teachers ran the school, because teachers assisted each other formally, and because the formal assistance gave rise to collaborative work as a norm.

Parents started mentoring each other and became activists on behalf of the school. Noticing a new construction site in the neighborhood, parents did some research and discovered there would be 200 new children coming soon. Their work helped the school to be ready for those children. Last year, parents helped assure a new wing for

effort to try again with something new. Tried and true simply does not always work in teaching. Yesterday's signal success with one student or class can be today's signal failure. That students achieve differently on different days with different approaches and materials is both the bane and the glory of this profession, and finding out why and what to do next are most productively carried out in concert with other teachers who are serving the same students.

What teachers already know is that "one gains knowledge of practice by engaging in it. . . . It is in the creation of a knowledge of practice that teaching lays claim to the title profession. . . . the three keys to creating knowledge of practice [are] innovation, adaptation, and continuous improvement" (Kerchner, Koppich, and Weeres 1995, 9). Schools are the unit of interactive practice, and professional growth for the teachers in schools is a seamless part of that practice that occurs through their interactions.

To achieve knowledge-generating schools, teachers, administrators, public agencies, and parents need to relate to each other as they do in our exemplary schools in McKinney (Texas), Santa Fe (New Mexico), Bellevue (Washington), and a host of other places in rural, suburban, small-town, and big-city settings. Central Park East did it in New

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York City, and the O'Farrell Community School is doing it in San Diego. And with any luck, the reader knows of a school in his or her neighborhood that is doing it now. Such new relationships need new kinds of contracts that specify time for

the school. Staff put up a "want ad" board where teachers would advertise their needs. A sixth-grade group of teachers wanted weather expertise for a unit on agriculture; a fifth-grade teacher answered the ad. Hierarchies and grade levels were superseded by expertise. The students flourished. When the first two years concluded, the parents went to the school board and were awarded an extension of the program for another term.

teachers' daily interactions and whole-school decision making, district policies that devolve the resources for learning to the schools, state and community policies that set the vision for learning and leave the work of realizing that vision in the capable hands of interactive practitioners, and professional action and responsibility for the quality of teaching and learning.

A SHARED VISION

The first order of business in such schools is to agree on a shared philosophy about child development and learning that creates the school's vision for student achievement. That philosophy, a researched, jointly developed, and agreed-upon statement, is the guide to all the work that follows. As designed by the ACT Academy, Sweeney Elementary, and Newport Heights communities, the philosophy is a working theory and a visibly present document that provides teachers, leaders, and parents with a benchmark for daily activities and long-range results. A school lacking a philosophy is rudderless, a collection of individuals pursuing independent goals and hoping that somehow it will all magically come together at the end.

The ability to develop a shared philosophy itself results from a learning process that is difficult because most teachers, parents, and administrators have never done such work. To prepare members to do it in Bellevue, the BEA was instrumental in researching, designing, and providing professional development for leadership, conflict management, and collaborative skills. Creating a working philosophy is necessary, but only a first step. The rest is continuous, job-embedded learning and improvement. Any school administrator who uses the past tense to claim "we restructured" has not even begun to try. As the teachers in our survey know, gerunds are the rest of the story: learning, improving, enhancing, enriching, changing, trying, working.

In-school learning for teachers should be viewed as the bedrock of learning for students. In Bellevue, an agreement to devolve such learning to the teachers resulted in changes for their local association. "Nowadays," says Michael Schoeppach, "when we run into performance difficulties with members, we spend more time drafting assistance plans and applying resources to help the individual. Instead of fighting, we put these resources into instructional improvement." And a district administrator agrees: "If it weren't for BEA, we probably couldn't have the kind of staff development that we have."

Joint resources and agreements among districts, teachers' organizations, and states are critical to creating collegiality. The teachers' organization behaves less defensively and focuses on the enhancement of teachers' quality at the building, local, and state levels. Where at present the professional development of teachers is generally a state mandate fulfilled by districts, the vision ought to be one of the professional development of teachers as the work of schools and quality review as the business of the profession.

Given the contracts and legislation to ensure due process, teachers' organizations can take on a range of new responsibilities for the quality of their members. Such responsibilities should include the establishment of standards for teachers' roles, such as NBC, and independent, statewide professional practice boards, such as currently exist in thirteen states, to set and review the certification process for all teaching certificates.

PEER ASSISTANCE AND REVIEW

Teachers' organizations can range even further toward the craft or guild model to include responsibility for evaluating teachers. This latter is a touchy subject for many teachers, who believe that assessing one another's performance needs to be completely separate from assisting one another's performance. But in Cincinnati, Toledo, and Columbus, Ohio, the NEA and the AFT have for several years carried out peer review programs. Although such programs have not yet gained widespread acceptance among NEA and AFT members, a crucial step toward professionalism must start with peer assistance and review.

In focused discussions, NEA state leaders have strongly recommended that the decision to explore peer assistance and review should be the prerogative of local affiliates, but that the state-level organization can help establish the legislation and advise on the contractual language that safeguards due process and fair employment practices while incorporating increased ability to evaluate and enhance members' quality. Collective bargaining, where it exists, and advocacy are major mechanisms for bringing about this recommendation.

In Columbus, Ohio, the Peer Assistance and Review (PAR) Program takes on both the induction of new teachers and a concerted effort to mentor and counsel veteran teachers experiencing difficulties. Induction for new hires who are experienced teachers is often ignored, but not in Columbus. The induction program is required not just for novice teachers, but also for all new hires to the city's school system. The mentoring, coaching, workshops, orientation,

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and evaluation are all carried out by trained teacher consultants released from classrooms full time to conduct this work. In the intervention aspect of this work, teachers can ask for help or be referred by either an administrator or another teacher. Such referrals "must be approved by the principal,

senior faculty representative, Association Building Council, and PAR Panel." The panel is a governing body consisting of four Columbus Education Association (CEA) representatives and three superintendent-appointed members. Teacher consultants then work with the referred teacher for an open-ended period of time (as long as it takes, provided the consultants report that progress is being made). Teacher consultants undergo an elaborate selection process and training to prepare them as positive and productive counselors and assistants. As of 1993, 144 teachers, (2 percent of the district's faculty) had undergone the intervention process over an eight-year period, of whom 79 percent successfully exited the program, 11 percent were counseled out of the profession, and 10 percent left the district before completing the program (CEA n.d.). The fact that teachers have taken on the hard but necessary task of

advising colleagues who cannot improve to seek other employment should form the basis of a renewed trust between teachers' organizations and the public.

In Columbus, teacher appraisal, staff development, and school improvement are integrated, not disjointed, and the work of all three is directed by the teachers themselves. Teachers' professional growth plans and a four-year appraisal process for all are measured against NBPTS benchmarks. From start to finish, teachers in Columbus take charge of their professionalism. As one of the PAR teacher-consultants puts it, "I treat others like professionals, and I'm treated like one, and I like that." PAR is firmly in the teachers' contract. John Grossman, the local teachers' organization president, says, "We don't guarantee jobs; we guarantee due process. If they eliminate [PAR], they will have to replace it with 'just cause,' and nobody will ever get fired. We have to get to the place where teachers assume the role of instructional leaders." Judy Braithwaite, the local's staff consultant, comments, "What I do is help the Columbus Education Association promote teaching as a profession. I want to create opportunities for teachers to get out of their comfort zone. *That* promotes growth."

Teachers' organizations have entered into peer review through collective bargaining in order to increase the efficacy of all. By providing full-time teacher-consultant positions, districts support teachers assigned to address the issue of poor performance instead of just battling it. Almost all the time, this results in retaining teachers with enhanced abilities, to the benefit of everyone. Contentiousness and wasted energies and human resources are greatly reduced.

In Seattle, Washington, a similar program called STAR (Staff Training Assistance and Review Program) cultivates teacher-mentors to counsel and assist new teachers and teachers having difficulties. Roger Erskine, executive director of the Seattle Education Association (SEA), describes his approach as "trying to move from a school system to a system of schools." And SEA Executive Vice President Verleeta Wooten adds, "It's important that we take responsibility for improving the profession, that we don't let somebody do it for us."

STAR mentors are experienced teachers serving three-year terms. A rigorous selection process and training program enable this cadre to work effectively with peers. Whether or not review and evaluation are the goal, teachers do need professional development to enhance their abilities as productive coaches and mentors to colleagues. Specific opportunities to learn how to do this well should be made available to all teachers.

Both novice teachers and veterans who received mentoring from STAR teachers nearly universally reported that these interactions improved their teaching. All involved are enthusiastic, including principals, who at first saw the program as a diminution of their power but now welcome the new strengths the program brings to their schools. A teacher who has benefited from peer review offered this perspective:

I found it difficult to share my problems with colleagues, knowing that they were also busy, and from insecurity of confessing my shortcomings and doubts. I wished for a mentor teacher in my first year, but that was not available, and I struggled to do my best alone. It has been a great relief and a great help to me to have time with [the STAR mentor] to discuss my problems and to have her observations on my classes and my teaching. She has a great attitude, combining corrections with encouragement and support. I feel much stronger now than I did in December '93, as a person and as a teacher. I am looking forward to further improvements in '94-95 (Withycombe 1994, 22).

Teachers wary of peer assistance and review fear that it will diminish solidarity and trust. But programs such as those in Columbus and Seattle seem to *increase* trust by embracing the entire spectrum of professionalism, including the obligation to assist teachers who need help or counsel them to leave the profession. In all NFIE's interviews and observations, we were unable to find anyone in districts practicing peer review who expressed reservations about these programs.

Such professionalism absolutely depends on solid, written agreements that uphold due process. As a result, recommendations to terminate—and they *have* come from peer reviews—are perceived as fair by all. The ability to invest serious time and resources in the improve-

Seeing how good colleagues are is the real goal. Learning to ask for and to give collegial help should be the norm in every school.

ment process is critical. Such time is not a matter of a few casual visits or ticking off checklists; rather it involves a year or two of sustained work, feedback, and study.

Mentors themselves gain from the transaction and become even better teachers. One STAR mentor says, "We definitely learn alongside the new teachers."

Peer assistance and review have not caught on in most places; but as schools develop collegial assistance as a norm for practice, it is possible that more local teachers' organizations will want to consider the positive effects of the process. An NEA teacher representative suggests that locals start by facilitating nonthreatening peer observations. "Let them see how good their colleagues are," she says.

Seeing how good colleagues are is the real goal. Learning to ask for and to give collegial help should be the norm in every school. In every school NFIE observed where collegial assistance and review are being tried, teachers were not just a little pleased; they were elated to discover each other's strengths and to benefit from them.

NFIE broadcast a call for teachers' best professional development experiences in *NEA Today*, a monthly newsmagazine distributed to all 2.2 million NEA members. Among those who wrote in response is Dr. Robert Maszak, a thirty-one-year veteran teacher at Bloom High School in Chicago Heights, Illinois:

There aren't many professional development experiences that made any difference to me in my thirty-first year of teaching high school English. Since I always thought I was a good teacher, most workshops, visitations, and evaluations were mostly a matter of spending a lot of time and getting little back in exchange. Then along came "collaborative consultation."

Evaluation was always an experience that occurred every two years that was only minimally helpful to me in improving student learning and improving me as a teacher. The evaluation, although helpful if I chose specific targets to work on, never [resulted in] a long-term change or improvement. When I tried collaborative consultation as a realistic measure of evaluation, I finally found something that is useful. Collaborative consultation is an interactive process in which teachers or other observers with diverse expertise help an individual teacher to improve instruction. Improvement is garnered through either improving current teaching processes, suggesting new approaches, or helping in the discipline, behavior, or learning of students.

As an example of the use of collaborative consultation, I invited two peer teachers into my classroom for two days, one hour each day. They were told to jot down notes about what I taught and how I taught it and to determine what I could possibly do to help the one nonparticipating student.

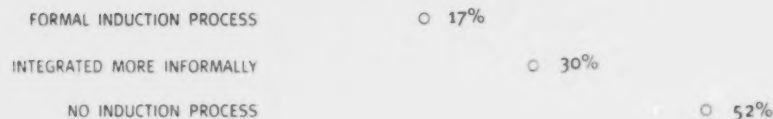
After two days . . . of classroom visitation, one hour of consultation with the peers, and an hour of arriving at better teaching practices, my teaching definitely improved in so short a period of time. As an adjunct professor of education at Governors State University, I researched the current literature and wrote a graduate course syllabus for a three-hour graduate credit course entitled "Collaborative Consultation for the Classroom Teacher." I have taught this course twice, and it is not only the highest rated course I teach but the most useful to me and [to my] teacher-students. For once, a professional development experience is helpful.

INDUCTION FOR EVERYONE

A structured, sustained, school-based, teacher-to-teacher induction process for teachers newly entering schools is of vital importance to the continuity of program and sustainability of shared philosophy. When faculties have agreed-upon visions for students and common approaches to meeting student needs, both new teachers and veterans need to learn what these are, have an opportunity to enhance them, and sustained opportunities to become a part of them. This kind of induction is neglected in most schools, where "learning the ropes" is all there is to a school. In fact, in many districts, teacher assignments are made the day before school opens, and teachers and students in some districts continue to be shifted for weeks into the school year. Poor planning and a cookie-cutter mentality in districts see teachers as being able to plug in anywhere at a day's notice without any harm. In a number of larger cities, this disorganization is compounded by teachers who are on substitute lists for years and who are dropped into schools with no support for periods of a few weeks to years and then dropped into another when new emergency needs arise. Those same substitutes are usually also at the top of the list when permanent positions open up. They are then veterans indeed, with no history of collegiality and little hope of gaining it.

A system of induction and mentoring new teachers not only constitutes professional development for the beginners but also provides substantial professional development for the mentor teachers, who must articulate and reflect on their own practice in the course of guiding someone else. The National Commission on Teaching and America's Future (NCTAF) discusses induction for new teachers at length. Another area of induction is of equal importance to good schools: the orientation of transfers and other veteran teachers to a school new to them. It is interesting to note that the Columbus PAR Program requires all teachers new to the district, including experienced teachers, to become interns with assigned mentors. Ideally, the site for induction should be the individual school, and the responsibility should rest with each school's staff.

NFIE's survey asked teachers who had moved to a new school whether they had undergone a formal induction process. Only 17 percent reported yes, 30 percent reported yes to an informal process, and more than half (52 percent) received no help at all (*Figure 4*). Of those who received some form of induction, only 32 percent found it very helpful, 53 percent found



Data Source: *Assessing Research, Inc.*

it somewhat helpful, and 14 percent found it not very or not at all helpful. The kinds of help such teachers received centered on rules and procedures; "learn[ing] the ropes" dominated (44 percent), and getting to know building colleagues fell behind at 19 percent, followed closely by gaining general knowledge about the district (14 percent) (*Figure 5*). Not surprisingly, when the surveyors asked teachers to make recommendations for how professional development should be improved, fully 90 percent supported having school faculties design and be responsible for an induction program for all teachers new to the building.

Induction also means adjusting to accommodate new talents brought by the new teacher and consequently rebalancing the school's needs and program. When faculty members have a say in specifying the qualifications for a new colleague, they also have opportunities to enhance school strength. A new teacher will bring abilities that should result in program changes and occasionally in adjustments in the school's philosophy as well. New teachers need opportunities to help shape the philosophy and make it their own, not merely to have to adjust to "that's how we do things here." Such give-and-take and rebalancing of assets suggest that a good induction process will affect everyone in the building; therefore, it needs to be structured with care to accommodate the adjustments and to respect what new teachers bring.

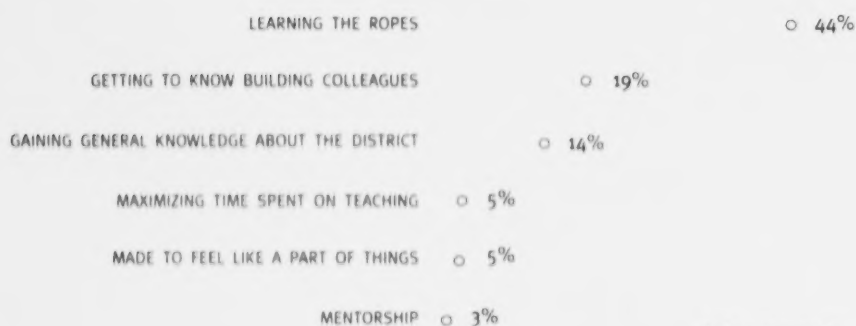
A period of at least a year and perhaps longer should be devoted to induction. Teachers' organizations and the private sector should support the development of demonstration induction programs, study their effects over a period of years, analyze and disseminate successful models, and support their growth as part of school reform.

The highest turnover in staff has been found characteristic of the most troubled schools. States and districts must ensure that such schools receive adequate funding and leadership support to create collegiality and stability. Novice teachers should not be assigned to such schools without substantial mentoring. Indeed, veteran teachers and leaders who have proven highly effective elsewhere should be provided incentives to help shape those schools where teaching is most challenging.

Induction to leadership positions and to reform efforts carried out by small groups within a building are also issues that have received little formal attention. As leadership roles multiply and become more available for more teachers, care needs to be taken to assure smooth transitions when the incumbents' terms end. Schools should create apprenticeships to leadership roles so that staffs will assure that someone is prepping in the wings to take on leadership at the appropriate time. If a science leader, for example, were the "chair" for a three- or four-year term, a "vice-chair" might be a useful designation to ensure that someone is available and preparing to stand for the next election. Continuity and stability are the goals for such formal induction or apprenticeship roles.

**TEACHERS' VIEWS ON HOW THE INDUCTION PROCESS WAS HELPFUL—
TOP RESPONSES**

Figure 5



Data Source: Greenberg Research, Inc.

As school staffs gain the power to design and carry out programs dedicated to the students they serve, they will also need to accommodate dissenting voices within their ranks and be flexible enough to adjust to new leaders without damaging the core of an ongoing program. They must keep the energy level and dedication high without fusing into rigidity or turning an innovative program into a new orthodoxy.

Many innovations of the past have faltered or failed as a result of leadership changes. NFIE recommends that teachers' organizations and the private sector support selected schools with track records of innovation to explore and develop leadership induction and transition models in order to demonstrate how to achieve a balance between stability and continuing innovation in our public schools.

RECOMMENDATIONS

HELP TEACHERS TO ASSUME RESPONSIBILITY FOR THEIR OWN PROFESSIONAL DEVELOPMENT

To enhance student learning in modern schools means to practice high standards for teaching, to assist one's colleagues, and to be assisted in reaching and maintaining those standards. Some ways of achieving this level of professionalism include the following:

1. SCHOOL-BASED PROFESSIONAL DEVELOPMENT

Professional development in schools should be based on an analysis of the needs of students in those schools and should be consistent with the district's mission and professional standards.

2. STANDARDS AND ACCOUNTABILITY

Professional development goals and plans should be decided locally by the school community of teachers, administrators, and parents. Standards for student learning and standards for professional practice should guide the design, conduct, and evaluation of professional development, and these standards should recognize and measure teachers' expanded roles.

3. BALANCING INDIVIDUAL TEACHERS' AND SCHOOL NEEDS FOR LEARNING

Individual teachers should design their professional development plans to fulfill their schools' needs for expertise. Schools should recognize teachers' individual as well as whole-faculty interests in pursuing professional development.

4. PEER ASSISTANCE AND REVIEW

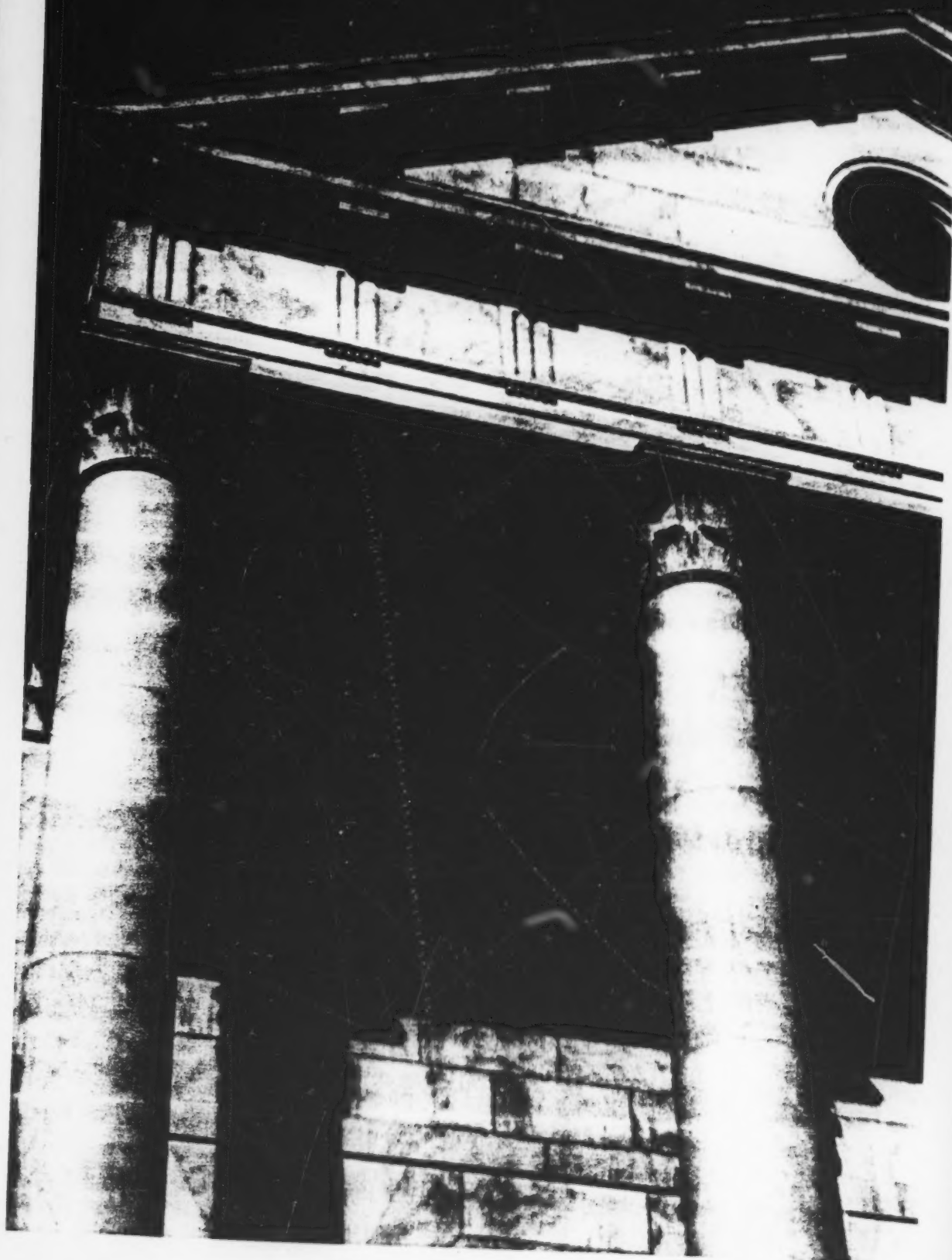
Teachers should assume responsibility for their continued growth and effectiveness. Teachers and administrators should collaborate in each district to create peer assistance and review to nurture the practice of all teachers and to counsel out of teaching those who, after sustained assistance by their specially prepared peers, do not meet professional standards of practice.

5. EXPANDED ROLES FOR TEACHERS

Teachers should study new instructional approaches, subject matter, and skills that enhance instruction, such as the use of information technologies, interpersonal and management skills, and skills for reaching out and including parents, business, and community resources in children's learning. Teachers who have gained such expertise should have multiple opportunities and time to fulfill expanded roles and to exercise leadership. Principals and other administrators should recognize, honor, and support teachers in these expanded roles.

6. INDUCTION OF TEACHERS

The induction of novices into teaching is dealt with in a report issued by the National Commission on Teaching and America's Future. In addition to the induction of novices, every school should organize a substantial, yearlong program through which its faculty will introduce new colleagues who are experienced teachers into the philosophy and operation of the particular school and help them refine their practice.



IV. FINDING COMMON GROUND: WORKING WITH THE COMMUNITY TO PROVIDE HIGH-QUALITY PROFESSIONAL DEVELOPMENT

Although teachers must be allowed greater responsibility, they should not carry the entire burden alone. To increase their ability to serve students, teachers need partners who can help them enhance their knowledge and skills. Parents are teachers' most important partners. Other partners include universities, libraries, museums, other community organizations with educational missions, and businesses. Teachers and these organizations should form long-term, genuinely collaborative relationships. Such cooperation could fulfill the obligation of each of these educational, cultural, or private organizations to the public. Rich resources should be made available to support teachers' and students' learning. Each community should enhance or create long-term partnerships for teachers' professional development. In addition, the federal government should establish a national institute for teachers' professional development.

Teachers can gain new knowledge and overcome isolation from each other through peer assistance, but the world of learning and discovery can be greatly enlarged through partnerships with parents, communities, and other professions at local and national levels.

PARENT PARTNERSHIPS

The top issue on teachers' minds when they think about education is parents. Teachers' highest priority for professional development is learning how to reach out to involve parents more effectively in their children's learning (Greenberg Research, Inc. 1996a). NFIE's public focus groups revealed a matching concern for greater parental involvement (Public Agenda 1995). Teachers and the public are very much in agreement that teachers and parents must help students succeed by combining their efforts to focus on student achievement.

The Oklahoma Education Association and many other state associations have responded to this priority among their members by designing professional development opportunities to help bring teachers and parents together. With a similar objective in mind, a group of teachers and parents in NFIE's Dropout Prevention Program in Shelby, North Carolina, took the lead in establishing a welcoming, comfortable place for parents to become involved in their children's education. Targeting the parents of preschool, Head Start, kindergarten, and first-grade students at Township Three Elementary School, the steering group designed a Family Resource Center. Critical to the success of the center are the parent partners, who prepare newsletters, flyers, workshops, and calendars to reach out into the community to involve all

parents actively in their children's education. With the program coordinator, the parent partners jointly manage the Family Resource Center. Together they maintain and increase community support, manage a lending library, plan and conduct workshops for the parents and teachers, and manage the facility. Another important partner to the program is the Hoechst-Celanese Corporation, which has provided funds for technology and has offered technical assistance, including statistical analysis of student achievement. Parents, employers, and teachers together create a strong atmosphere of support and affirmation in which all students can thrive.

In two other exemplary instances, teachers have reached out to parents in ways that integrate learning for parents and teachers through a focus on student work. Kathy Howard is a middle school English teacher in Pittsburgh who became a lead teacher in the Arts Propel project, an intensive effort over six years to translate Howard Gardner's theory of multiple intelligences into portfolio-based curriculum and assessment in writing, art, and music. At one point, Howard prepared a protocol for parents that would guide them as they reviewed their children's writing portfolios. Parents responded enthusiastically to the opportunity to engage in this process, and the results were spectacularly positive for everyone. Students were surprised and delighted to have serious conversations with their parents about the ideas in their writing, and parents homed in on those ideas as the priority in reading their children's work. Everybody learned by this focus on student work, and parents and children were drawn closer by the opportunity to reflect on the children's schoolwork.

Parents who have been given a chance to read the books and review the portfolios side-by-side with teachers are going to be knowledgeable not only about their own children's work but also about changes that teachers hope to introduce into schools.

In another instance, teachers in a small, rural town in the South were thinking of introducing literature by a number of diverse, contemporary authors into the high school curriculum. They organized a series of reading and discussion groups and invited parents to participate. The teachers and parents read such authors as Toni Morrison together for the first time. By the end of the program, parents were as enthusiastic as teachers about the chance for their children to read the same books so they could all discuss them again together.

In both examples, teachers reached out to parents by focusing on student work. Both efforts invited parents to be equal partners in their children's intellectual development. Both included parents as members of the community of learners. Parents' knowledge represents a rich resource that can benefit both teachers and students.

Parents who have been given a chance to read the books and review the portfolios side-by-side with teachers are going to be knowledgeable not only about their own children's work but also about changes that teachers hope to introduce into schools. For example, communicating what is meant by "the writing process" can be best accomplished by joining with parents in studying actual pieces in a portfolio from early notes through the drafting and editing processes. Parents and children who have opportunities to reflect on children's progress and to see what Arts Propel called "the biography of a work" in all its growing stages are learning about each other as they learn about learning.

Parent growth needs to accompany teacher and school development every step of the way. Teachers and administrators must remember that omitting parent development risks everything else they are trying to achieve. Teachers are crying out for closer parental involvement. It is hard work and time-consuming for everyone, but it is a fundamental requirement if the children are going to succeed.

ACADEMIC AND CULTURAL PARTNERSHIPS

If hands-on, active learning is the desired goal for students, their teachers need access to the actual pictures painted, stone tools carved, languages spoken, rocks heaved by seismic thrusts, and words written by poets and patriots.

Few or none of these fascinating objects and writings are to be found in textbooks, teachers' manuals, in-service workshops, schools, or teachers' conventions. Discoveries, such as a new phylum of the animal kingdom, the first extrasolar planet circling another star, a new set of ancient scrolls brought out of Judean caves, a new understanding of how cells work, a new poem or play, a new use of computers to compose music—all these and a universe of other ideas and objects, ancient and modern, need to be examined and thoughtfully incorporated into our classrooms.

Teachers need to learn how to seek out such materials, decide which are appropriate for instruction, develop ways of introducing them to children, and evaluate students' learning

Reconnecting teaching and scholarship as a dynamic part of public education is a key to restoring public trust in all levels of education.

from them. But much new knowledge is locked up in scientific journals, highly technical Internet discussion groups, and seminars and conferences for which teachers have neither the time nor specialized

vocabulary. Although there are a growing number of electronic "field trips" and other projects in which teachers, students, and scholars do science, archaeology, or history together, generally the world of discovery and knowledge across the arts and sciences and in such fields as engineering and architecture is not available in usable forms for teachers to access, synthesize, and prepare for students. At the same time, teachers and scholars need periodic opportunities to reassess the old curriculum, to recast it in light of new discoveries, and to retain the core while incorporating judiciously selected new material. Recently developed high student standards in each of the major school subjects are just that: standards for judging student performance. Creative curriculum and assessments and daily activities designed to meet those standards are supposed to be crafted by teachers. When, where, and how to do that have not been revealed. All this needs to make sense across the curriculum and connect to what came before, and what is to follow. These are not once-in-a-lifetime tasks; rather, they constitute a continuous sifting process that takes concerted effort. Teachers cannot do this job alone.

Higher education institutions as a whole, as well as schools of education, are major resources for teachers' professional development. These institutions are supported by the public either directly through tax revenues, through tax-supported grants and contracts, and in the case of private institutions, through their tax-free status. Higher education and scholarly and scientific societies all benefit directly from such public support because the public

believes the advancement of general knowledge is a benefit for all. NFIE urges all higher education institutions and related research societies to recognize the public school teachers of America as a major avenue for transmitting advances of knowledge to the public.

Higher education's central mission—to discover and to educate—should include the professional development of teachers at the core of its work in all fields and all branches of learning. Teachers and districts should invite higher education to become a substantial partner in teachers' professional development in a variety of ways to be determined locally. Higher education, in turn, should acknowledge this work as essential to its mission.

In addition, most communities and regions have an array of other resource institutions that are equally vital to teachers' ongoing learning. These include public and private libraries, museums, historical societies, archaeological and natural sites, arts organizations, businesses, and government resources.

Over the past fifteen years, many of these resource institutions, as well as higher education, have joined with teachers in a host of partnerships that have proven fruitful for student learning but have been overly dependent on grants and weakly linked to schooling. Together with higher education, partnerships with such organizations need to be more strongly linked to effective professional development and with changed practice and content in the schools.

To provide high-quality resources for ongoing, school-based professional development, teachers must recognize the value of these resources, and the resource institutions must recognize their responsibility to teachers. Together, teachers and their partners create a special form of knowledge and skill that partakes of the world outside the school and builds on school-based peer assistance. Both forms of learning and growth are essential to the expanded roles for teachers in modern schools.

WISCONSIN TEACHER ENHANCEMENT PROGRAM IN BIOLOGY (WTEPB)

I am writing to express my profound gratitude for the programming provided by the Wisconsin Teacher Enhancement Program in Biology. I am a third-grade teacher with a master's degree plus twelve graduate credits and thirty-two professional advancement credits. I received the Wisconsin Outstanding Teacher of the Year Award from the Wisconsin Council for the Gifted and Talented in 1986. I state this only to let you know [that] I have always had a love for education and felt I was a dedicated teacher. I also knew, however, that I had a terrible gap in one area of the curriculum—science. Until my first class with WTEPB (formerly named the University of Wisconsin Genetics Institute), my science teaching was almost nonexistent. I could always manage to avoid teaching science because there were so many other areas of the curriculum I could address. I felt guilty. . . .

In the spring of 1990 . . . I took a two-week class on the University of Wisconsin campus. . . . This class was the beginning of my transformation into an enthusiastic, enlightened, and confident science teacher. It was a totally exhausting two weeks, but I came away so enthusiastic that I spent the rest of the summer preparing materials for my classroom. . . . I started making contacts on campus, after living in Madison for twenty years . . . but not having the courage to reach out to scientists for help.

I managed to get two surplus microscopes from one of the presenters in our class. I had never had a microscope in my own classroom before. In fact, we only had one in our school of 450 students. The following fall, I could hardly wait to try out my hands-on, organized program. My students loved it. Their parents were most appreciative. The first thing my students would do in the mornings would be to check their fast plants, mealworms, fruit flies, or bacteria. We pulled apart flowers to study the parts of a plant and the purpose of each part. The students used the microscopes almost daily. We borrowed chick embryos from Poultry Science, and the students found it fascinating to see the daily development of a chick, even if they were all in preservatives. We borrowed stuffed birds from the Zoology Museum

and drawers of insects from the Entomology Department so the children could observe the variation within species of birds and insects as well as among different species. We built models of plants, insects, and birds. We used sea urchins to look at sperm and eggs and then combined them to see fertilization. We drew up pedigrees, made models of offspring based on dominant and recessive genes. We had professors from Soil Sciences and the UW Medical College visit our classroom (and they continue to come each year). We set up composting containers, and this led to a study of ecology. I was hooked. I wanted more.

The following summer, I was a facilitator for the "Elements of Biology" class. I also took a new one-week course that was offered by the Genetics Institute entitled "Tools to Teach Elementary Biology." Here we investigated several areas, such as corn, carrots, mosquitoes, and microscopy. As each year passed, I was eager for the new recharge of enthusiasm I received from these classes in the summer. I've taken week-long sessions on microscopy and mosquitoes, which grew out of the "Tools" class. I've also taken the "Cell Biology" class and helped to facilitate it at the Cray Academy in Chippewa Falls and at a two-day seminar for teachers held at Promega, a genetics company in a Madison suburb. Last summer, I facilitated "Science for Head Start, Preschool, and Primary Grades" because requests were coming in to meet the needs of teachers of younger children. I also taught the "Mosquitoes" class at the Cray Academy last summer. During the summer of 1993, I spoke to science professors on the UW campus, encouraging their participation in the Science Scholars Program for undergraduates, where a triad of a researcher, a teacher, and an undergraduate education major would work together to guide the undergraduates in research and then adapt their information into practical classroom materials. I continued with that program in 1994. In February 1995, I sat on a panel of researchers and teachers for "Bridging the Gap." The purpose of this one-day symposium was to help connect teachers with scientists. I also was a presenter representing the Science Scholars Program. Some of my past and present third graders are being mentored by UW researchers and professors.

... I have gone from avoiding science to being an enthusiastic missionary for reform in science in the elementary schools.

Institutions and individuals in the academic, scientific, and cultural worlds need a new set of permanent and powerful relationships with teachers and schools, a meeting place where research and teaching come together on common ground. Reconnecting teaching and scholarship as a dynamic part of public education is a key to restoring public trust in all levels of education.

Many institutions other than schools and colleges have public education missions. Such institutions should be major partners in teachers' professional development as well as student learning. In the late 1970s, the American Association of Museums began to work on reconceptualizing the very nature of museums. The rethinking has placed public education at the center of the museums' mission. More and more museums, archives, and historical societies have opened the heart of their work to teachers and students, encouraging them to get to know the collections and inviting them inside the "staff-only" parts of museums to learn to interpret the collections for themselves. In Philadelphia, the school district has had teachers on the payroll for decades who work full time in the city's major museums. In Toronto, the Science School at the Ontario Science Centre enables teachers to work there on loan from their schools.

Museums have sponsored a rich array of workshops and seminars for teachers and students and are learning how to help make these interactive, collaborative ventures an opportunity for teachers to use collections as curriculum centerpieces. Archaeological sites, architectural treasures, nature preserves, and an almost limitless list of other cultural and scientific resources are forming partnerships with teachers and schools in every part of the country. Most of these outreach programs provide direct services to students; but the best also work closely with teachers to introduce them to the site and its resources beforehand, enabling the teachers themselves to develop appropriate curricular uses of the resources. It is

essential that visits to museums should not leave children in the hands of docents while teachers step aside. Teachers and curators should jointly develop curricula in which the museum collections are fully integrated. Field trips should be, not isolated events, but a necessary part of students' work in school. For this, teachers must first learn about the collections in depth and develop curricula suitable for their students.

Artists have found their way into many schools to enrich curriculum. In some programs, such as those sponsored by the Community Programs in the Arts (COMPAS) consortium in St. Paul, Minnesota, artists and teachers from rural as well as urban areas study together to learn how best to devise arts curricula that are then implemented in the schools, studios, concert halls, and theaters of the region.

All these programs are vital resources for schools, but they need to be sustained and powerfully connected to the curriculum. This is the job of teachers working jointly with their partners in the cultural community. Time to enable teachers to learn collections and work with artists and writers is one requirement. Long-range support for sustaining the partnerships is another. Schools are increasingly leaving arts education to the ability of struggling nonprofit organizations to raise grants, an untenable position in the long run. A recent New York City schools chancellor was heard praising the Brooklyn Museum's fine arts education programs and saying that this was going to be how the city's students would learn about the arts. When he suggested that, he must have momentarily forgotten he had nearly 1 million schoolchildren on his hands.

There are 44 million schoolchildren in America, and they all certainly deserve a chance to learn from real objects—authentic documents, archaeological digs, art, poetry, business, nature, and the rest of the real world outside the schoolhouse door. Such learning has proven enormously exciting and effective

I feel this transformation was possible because of the format of the WTEPB. The first commitment was for just two weeks. If it had been longer, I fear I never would have gotten involved. The follow-up one-week modules continued to draw me back each summer because I could slot them into my summer around my own classroom planning, taking classes in technology, and family plans. . . . Elementary teachers need to refresh their curriculum with classes in reading, math, social studies, and new technology, as well as science. The one- and two-week modules are a great way to improve their science programs in an enthusiastic and manageable setting. . . . Programs that are less than a week often leave clever ideas in suspended animation—entertaining but not enough context and time for changes in philosophy or deeper understanding. . . .

. . . Following my first class in the program, I was impressed and amazed that the planning committee for the following summer included as many teachers as scientists. . . . This attitude of respect continues.

. . . We are taught by scientists! . . . They obviously love the content and process of science, and their enthusiasm is contagious. . . . Professors have often commented that they learn so much from the teachers about exciting ways to present their material that they use some of those ideas with their university students. What a delightful partnership. . . .

During the modules, teachers can work in groups to share experiences and activities. Since there is never enough time to do this during the school year, this setting is a powerful environment for change and development. It is a rare and wonderful opportunity to develop teaching materials and techniques in an atmosphere of mixed levels of teachers, having a scientist available to us for accuracy, and the input of the scientist's own refreshing pedagogical style. . . . Of course teachers continue to build on these materials as they have the opportunity to field-test and assess them with students. In this way, the materials are directly relevant, as opposed to the cookbook approach to science instruction.

Betty Overland
Glenn Stephens Elementary School
Madison, Wisconsin

THE SCIENCE SCHOOL

Since 1982, the Science School at the Ontario Science Centre has provided opportunities for fifty-six high school students a year to study biology, physics, chemistry, calculus, and "Science in Society" in a premier museum environment. The school is supported by Toronto's boards of education and the provincial government. Teachers from the metropolitan Toronto area apply for one-year appointments (which are often extended) at the school, after which they return to their home boards. Although teachers and students have some formal class time together, the program also enables them to explore projects and become an active part of museum work. The job of the museum is to communicate science to the public through the design, construction, and interpretation of hands-on exhibits. Students, teachers, artists, scientists, and others plan exhibits together and design and construct them. Teaching requires deep understanding and the ability to explain visually in three dimensions as well as verbally and numerically. The Science School's work is an intimate collaboration between teachers and museum staff and an opportunity to understand science from the inside out—all for the benefit of students.

put their resources to use in children's learning; but at present, many do not know where to turn to gain access to the curriculum. Schools need liaisons, teachers who know the children, the school's curriculum and philosophy, and the community's resources well enough to facilitate a productive match. Such liaisons or coordinators would act as contact points between the school and specific learning resources, such as museums or artists.

Each area of expertise requires nontrivial learning for the teacher. A teacher might need more than one full summer to get to know the collection in a single historical society; another teacher could gain expertise in relation to one or more arts in the region, and others could make contact with a local science laboratory or arboretum. Each teacher would also have to combine knowledge of local resources with relevant subject-matter study.

BUSINESS AND COMMUNITY PARTNERSHIPS

In many communities, business has become a supporter of schools through myriad programs of giving, volunteering, and working on behalf of fiscally sound, well-managed, and

when done well, but it cannot be made available without tax-based support and deep learning about these resources by teachers.

Specialized associations, teachers' organizations, cultural institutions, and libraries should conduct conversations in each locale about how to secure more permanent support for partnerships and how to make such learning more available at a distance. Our cultural and natural heritage should be a laboratory for professional growth for all teachers and should also figure in preservice education, where it is currently greatly neglected.

Drawing on these resources is fast becoming a necessary area of specialization. Schools are recognizing that fulfilling a broad array of knowledge-based roles may not be possible with school employees alone, and important learning opportunities for students should be organized in other settings. Object-based learning based on museum collections, historical documents, archaeological digs, and science labs is fundamental to learning. Schools everywhere have access to one or more of such resources. Each school should enable designated staff members to learn the collections and sites thoroughly in order to use the potential of these resources well at appropriate points in the curriculum. External organizations are eager to

innovative schools. For example, Trail Blazers, one of NFIE's current grantees, includes a business-school partnership that provides professional development for teachers in the latest techniques for computer-assisted design. Housed at the Odyssey School in Rochester, New York, Trail Blazers links staff at Erdman, Anthony, and Associates, Inc., an engineering consulting firm, with teachers from the school to help students build a fitness trail on school grounds. This real-life application of engineering helps students put their mathematics and writing skills to work. According to Jay Jones, engineer and director of professional development, the partnership gives students and teachers access to engineering expertise, sophisticated computer workstations, and state-of-the-art design software the school could not otherwise afford. The company increases its future employment pool of able young people by upgrading the technical knowledge of practicing teachers, and teachers and employers gain mutual understanding of their expectations for young people.

Businesses in a number of cities have pooled their resources to create teacher academies. Businesses have also underwritten local education funds, invited teachers to learn about business through internships, offered to share their own management development programs with teachers, and in a host of other ways strongly supported teachers' professional growth to strengthen the schools.

An important need at this time is for corporate technology developers to work with teachers and students as they consider new products and access to information. Recognizing that the next generation will be familiar with information technologies from early childhood and that this has the potential to revolutionize teaching and learning, the corporate world has a major stake in ensuring teachers' sophistication in using technology and affecting corporate activity in this realm. Private-sector support, friendly criticism, and collaborative work with teachers are vital to school

THE "WE RELATIONSHIP"

The New Iowa Schools Development Corporation (NISDC) was established with the strong support of the Iowa State Education Association (ISEA) and the state's governor. It brings together virtually every major educational policy player in the state. The corporation is funded by a provision in the state budget and is governed by an independent board of directors, which includes representatives from ISEA, the state's area education agencies, higher education, the state legislature, school boards, business, the governor's office, the state board of education, the PTA, and School Administrators of Iowa.

NISDC maintains a network of approximately eighty districts, many of which are affiliated with NISDC through membership in a federation with an area education agency that, in turn, is working with the corporation. The network operates according to several guiding principles, including a belief in the local control of, and responsibility for, school reform, a commitment to quality public education for all students, an understanding that positive change in education is based in large part on effective leadership and collaboration, and a recognition of the benefits and rewards of life-long learning. Through leadership development, school-based improvement, and community collaboration efforts, this network promotes the creation of "new Iowa schools." The success of the enterprise will depend on professional development.

NISDC has a large team of advisers who work with participating districts to accomplish the network's objectives. For the most part, these individuals hold positions within school districts where they serve as NISDC facilitators. At least two are presidents of their districts' local teacher associations. NISDC also employs several consultants, chief among whom are Stan Burke, an NEA UniServ director (local teacher representative) from West Des Moines, and Peter Holly, formerly with the Gheens Academy. These consultants work with individual schools on professional development issues, such as the need to establish a climate of collaboration and leadership within buildings, and other teaching and learning issues. Gerald Ott, NISDC executive director, identified the need for a common vision for schools and for a "we relationship" based on a commitment to collaboration.

In reflecting on the changing role of the union in school

reform, David Wilkinson, an NISDC facilitator who is involved with school improvement issues in the Des Moines Public Schools, said that when collective bargaining began and for many years following, association leaders had one objective: to advocate for members. Now these association leaders are at the reform table, and their obligations are far more complex. Today, they can choose to be educational leaders who work on behalf of students and the community, as well as advocating for members. Rather than sitting outside the arena, they are part of the process.

improvement, but both parties need to overcome uneasiness about working more directly with teachers' organizations. Local teachers' organizations can and should become partners with the business community, particularly in promoting professional development opportunities. Business, school districts, parents, and teachers' organizations should honor one another as full partners in school reform.

The multiple roles of business in teacher's professional development should include the continued provision of local support and friendly criticism and the formidable convening power of the

corporate world to help create fruitful partnerships and advocate sound policy. Business has preeminently led the way in adopting "learning organization" theory into practice and organizational change. Recognizing how hard it has been and how long it has taken major corporations to restructure, business can perhaps be helpful to schools in publicizing the long-range planning, learning, and implementation phases prerequisite to successful results. As a school board member mentioned in a conversation about the ACT Academy, his corporation had taken many years to effect changes similar to those that ACT was proposing to accomplish in a few months. Successful businesses that invest substantially in human resource development understand its signal importance. The business model for the time and investment necessary to create ongoing learning should be made accessible for all schools.

Business, teachers' organizations, universities, states, and others have already begun to form coalitions to improve public schools. Where they exist, such consortia should direct a major part of their work to teachers' professional development. When teachers' organizations become positive partners with business, teachers' professional development may have a chance to gain the political advocates it currently lacks.

Above all, business should devise rich opportunities for all employees, especially those who are parents, to take an active part in the local schools. Providing time and incentives for such partnerships is a critical need for a society in which the majority of parents work outside the home.

Communities must also be strong partners in education. Every business has a stake in the quality of the local schools' graduates, and every civic and nonprofit organization in the community can and should be a resource to help young people thrive. But resources are inequitably available, and need is inequitably located in our cities, suburbs, towns, and countryside. States have an obligation to assess the professional growth opportunities available and to find formulas for distributing additional support to schools with less access. Teachers in small towns and suburbs have had less access to the major reform efforts of the past thirty years because entitlement funds have been concentrated in large urban centers and poverty areas, but urban areas that are poor in revenues are often rich in cultural resources. Teachers' organizations should become partners with states to assure that teachers everywhere have rich opportunities to learn. If each locale conducts an inventory of learning resources, states can adjust support to locales where teachers might need extra travel funds or computers to support

their learning. Assessments of need by states and teachers' organizations should also include assessing the *quality* of available resource institutions, such as museum collections and science labs. Teachers and schools that are far from the best resources should have access to study-travel allocations in order to explore these resources. Community members and school staffs also need to travel to other communities and schools on a regular basis to learn and to evaluate practices that could be incorporated in their schools.

Students in different communities have inequitable access to computers. The National Center for Education Statistics found computer use higher among whites than among blacks and Hispanics at home and in school (U.S. Department of Education, 1995a). States must ensure that school use rises to a level at which there will be no ethnic or racial differential in student or teacher access to equipment and the Internet.

In a 1994 National Governors' Association (NGA) report, *Transforming State Education Agencies to Support Education Reform*, Paul LeMahieu and Bonnie Lesley recommend that "educators, parents, business leaders, community members, and the broader citizenry . . . all participate in [a] discourse" on the needs of schools and "contribute to [their] improvement" (David 1994, 26). They also recommend that districts devise a new form of reporting to the community on the state of their schools that will go beyond test scores to a richer and deeper discussion of learning reflective of the kind of vision for schools that NFIE advocates. Jane David, in the same NGA report, suggests that "state education agencies also can communicate new images of teaching, learning, and managing by offering guidance on school self-evaluation and review, modeling what is expected, encouraging risk taking, and aligning evaluation and accountability criteria with these images" (13-14).

Communities will need to learn to be supportive and patient while continuing to be critical of their schools. This will depend on the ability of schools effectively to engage communities deeply in vision setting for students and on the emerging work of students. The case to be made for investing in the human capital in our schools will depend on communities learning as teachers learn what it means to educate all children.

PROFESSIONAL PARTNERSHIPS

Most teachers enter the field because their hearts are with the children rather than just with their subjects, which is as it should be. In 1991, nearly two-thirds gave as their principal reason for becoming teachers in the first place their desire to work with young people. Only a third gave as a principal reason an interest in subject matter, heavily weighted by senior high school teachers (59.2 percent) and rather light at the elementary school level (16.2 percent) (NEA 1992, 62, 230). Teachers, however, are responsible for transferring a growing amount of knowledge to the next generation, making the need for lifelong study of subject matter more important every year. According to *The National Education Goals Report*, the percentage of secondary "teachers who held an undergraduate or graduate degree in their main teaching assignment" has decreased since 1991, from 66 percent to 63 percent in 1994. That means a large percentage of our junior high and high school students are learning mathematics or history from teachers with no formal degrees in that field. However, most teachers (93 percent) do hold certificates in fields *related* to their assignment (1995). Furthermore, although few

inquire about degrees in subjects for elementary or middle school teachers, these teachers are the first to introduce the subjects of mathematics, history, literature, and science, and generally do so without having taken more than a course or two in these subjects, at best.

Teachers' connection to and interest in formal study of subject matter has declined during a period when central offices of school districts have increased their control of professional development. This trend is visible in the NEA's 1990-91 *Status* survey (56), which reported that nearly three-fourths (73.5 percent) of teachers had taken school system-sponsored workshops in that year and that another quarter (24 percent) participated in school system-sponsored summer professional development activities. There was a parallel and substantial drop over the 1971-to-1991 period in the taking of college courses in subjects other than education, from a range of 22 to 40 percent in 1971 to only 4 to 21 percent in 1991.

Some of this shift can be attributed to the aging of the teacher workforce. Younger teachers take more college courses and degree programs than older ones who already have their master's or master's-plus degrees and credits. Even so, the data reveal a general decline in study of the arts and sciences. This trend is very disturbing at a juncture when many education analysts support the need for all teachers to have an undergraduate degree in arts and sciences and when more and more decision making about the content of curriculum is being placed in teachers' hands. The professionally developed student standards presuppose an immensely sophisticated understanding of subject matter at every level, including elementary and middle levels as well as high school. "Authentic" assessments, largely teacher-generated, can only be authentic if they represent a deep conceptual understanding of complex subjects by the teachers setting them and assessing them. The task is daunting for all teachers, and especially so for elementary teachers.

The problem of insufficient subject knowledge is exacerbated by districts' policies that hire and place teachers with and without relevant subject-matter credentials and teaching expertise. Although inner-city and rural districts have difficulty attracting highly qualified teachers and there are perennial shortages in science and mathematics, good teaching at any grade level depends on subject-matter knowledge and the ability to teach it as well as on understanding of children's growth and development.

As we devolve curriculum and assessment design away from district offices and textbook companies to the schools, we must also find ways to make rich and powerful curricular ideas and materials directly available to those staffs. If teachers are to make the most of these new opportunities, they need access to additional information and resources.

Subject-based Professional Development. Judith Warren Little's seminal study "Teachers' Professional Development in a Climate of Educational Reform" (1993) emphasizes that the first principle for professional development is that it must offer meaningful intellectual stimulus to teachers from sources both in and outside of teaching. The second principle is that professional development must be tailored to the context of the workplace and teachers' experience levels. Teachers under pressure to do everything all at once will understandably forestall their longer-range learning and instead deal with immediate crises. Changing teaching approaches and methods, bilingual and special education, organizational and leadership skills, and far and away, technology are the top choices for learning that preoccupy teachers today. Core subjects run far behind these. Yet when teachers do study the content in the right set-

tings, their level of excitement and their desire to share their own new knowledge with their students are extraordinary. In project after project where teachers have engaged in intensive arts and science study, evaluations have yielded strongly enthusiastic results, and *all* students, including those with learning disabilities, have benefited. Here is the response of one teacher who joined with colleagues in the History Project to study early American historical documents in the very setting in Philadelphia where that history was made:

I remember sitting in the American Philosophical Society and being given information on how to do research in the library. . . . And I remember being in total awe of sitting there in this very prestigious institution, where you can't just walk in, and just thinking "oh my goodness . . . this is just too exciting," . . . which then said to me "Hey, if I think this is pretty cool, I will bet kids might like to be out in a place that is really special too" (Useem et al. 1995, 12).

In keeping with the primacy that they give to student learning, teachers usually measure the usefulness of professional development programs in strict terms of their immediate relevance to their classrooms. Elementary school teachers' autonomy is much greater than that of secondary school teachers, for whom state mandates and college entrance requirements specify numbers of years of English, mathematics, languages, and so on for graduation and for whom college entrance exams and departmental structures, tradition, textbooks, and habit all conspire to produce a virtual national curriculum that differs little from place to place and leaves little room to innovate. Professional development offerings like those experienced by Betty Overland at the University of Wisconsin have a far greater chance of actually influencing curriculum in elementary schools because elementary teachers have far greater flexibility and autonomy *and* the self-contained classroom, permitting them to use what they learn. The externally offered college- or museum-based programs sponsored by federal and private resources have been and continue to be signally ineffective at the high school level or only temporary aberrations from regular offerings as add-on honors or special electives. They have generally operated apart from the decision-making processes of districts and states. Some have been instrumental in standards development because many of the same teachers who have volunteered to engage in such study have also been tapped to join specialized association work on standards development, but such connections have been happenstance rather than deliberate.

Teachers' excitement with such study depends on the presence of several prerequisites. The program must offer substantive knowledge; respect teachers' intellect; be genuinely collaborative; last for a substantial, uninterrupted time (at least two weeks); include local, readily available, and structured follow-up; be designed to respond to *schoolwide* requests and teachers' authority to implement changes on a substantial scale in the school; provide both time and opportunity for teachers to make the transition between what they are learning and how to teach it; allow a period of at least three years between the start of intensive study and expectations for broad-scale implementation in classrooms; and allow even more time before that implementation can be evaluated for its impact on student achievement.

This list of requirements is based on evaluations of dozens of major grant-funded attempts to strengthen arts and science teaching in public schools over a ten-year period. The efficacy of such professional development has been proven, but it is as yet unattached to systemic

"STUDENTS [WHO] CAN'T WAIT FOR MATH TO BEGIN"

I would like to tell you about three of the most revolutionary experiences any teacher could have.

We in Kentucky have reformed every part of our educational system, and I feel we will be an exemplary leader of the next decade. Most of the success of this reform can be attributed to [a number of] excellent programs in professional development. One is the writing program at our universities called "The Writing Project." The one I attended was at Eastern Kentucky University. . . . Every teacher emerges a prophet of the program. . . . The teachers also go forth in the summer to teach workshops, so many [others] are converted this way. Our students are completing excellent writing portfolios, and their ability to express themselves in the fourth grade is amazing.

Added to this experience, I attended the "Writing Project Workshop" at Columbia University. . . . This program is an annual event the first two weeks of July. During this experience, I felt like I had died and gone to heaven. In this workshop, the morning was spent with Lucy Calkins motivating, inspiring, and making you think. The afternoon followed in a group setting of twenty teachers under the leadership of a published educator. . . .

The third experience I have had that changed my whole teaching method was the "Middle Grades Math Project of Kentucky." I attended two 45-hour sessions from January 1995 to the end of June. Every mathematics class I teach now has exploration, discovery, real-life problem solving, and students [who] can't wait for mathematics to begin. . . . I help teach other teachers to incorporate the NCTM standards into the mathematics program.

I feel so lucky to have had these three opportunities to develop as an educator. I wish I could . . . help other teachers experience what I did in New York City. Words cannot describe the profound effect it has had on me as a teacher. . . .

Alene L. Tudor
White Hall Elementary School
Richmond, Kentucky

reform. Finding a permanent home and support for such work is fundamental to improving teachers' career-long learning.

Teacher Networks. Teachers are willing to acquire this knowledge and have already taken numerous steps to organize opportunities for life-long learning. Formally structured, purposeful teacher networks have grown up in a wide array of subjects dedicated to the development of new curricula and more effective teaching. Such networks have revolutionized the two most basic of the basic subjects: writing and mathematics.

Alene Tudor participated in both movements, nationwide efforts begun by teachers and sustained by networks of teachers, professors, specialized professional associations, and a host of friends and supporters. In both writing and mathematics, teachers started by honestly confronting the dilemma of an American student population that just wasn't getting it. And in both cases, teachers realized the problem was not the *students*; it was how they were being taught.

In the case of writing, the discussion began in 1974 among schoolteachers and university English teachers as the Bay Area Writing Project. By 1996, the new approach to teaching writing (the process referred to by Tudor) has reached most of America's elementary teachers and many secondary teachers not only of English but of all subjects across the curriculum. It has also reached most universities, where the writing process approach has created new, separate departments and programs of writing and rhetoric, new professional societies, journals, computer networks, and centers where third-grade teachers and graduate professors interact daily to share their research findings and to build a new discipline together. The new writing discipline was created jointly by teachers and professors from the beginning and has matured with equal contributions from both groups ever since. It has found permanent homes in the National Writing Center at the University

of California, Berkeley (partly supported by federal funding), at the Bread Loaf School of English in Vermont, and in school and college partnerships across the country and many abroad.

The mathematics revolution is in full swing, initiated solely by the National Council of Teachers of Mathematics in the mid-1980s and spread through NCTM's workshops, conferences, and publications to become *the* model for state standard setting and general practice from kindergarten through high school graduation. Largely supported by the mathematics teachers' association on its own, NCTM standards are reaching teachers more slowly than the writing process did, but the acclaim the standards have earned will prevail over time in every classroom where mathematics is taught.

The information technology revolution has created new ways of doing basic research in every field and is beginning to take hold in teacher networks as well. For over a decade, the new writing movement has flourished, partly because widely scattered teachers who studied together in the summer on a university campus have gotten together on-line all year to develop research and teaching around their students' work. Discussion groups often bring teachers and students together into the same networks, across the country and even internationally, and across all age groups, to develop their writing, teaching, and assessment. Electronic networks have revolutionized the teaching of writing and, by extension, promise to change fundamentally how teachers conceptualize teaching. Electronic networks break down all barriers of position and status and allow the quality of conversation to determine value. This democracy of learning brings together graduate professors, elementary teachers, and students into a vibrant community of learners and researchers.

NFIE's innovative projects have communicated for years via such moderated forums and discussion groups. At this writing, twenty-two sites are participating in NFIE's The Road Ahead program, a developmental project to connect schools, community agencies, and students to learning with information technologies. Supported with the proceeds from Microsoft CEO Bill Gates's recent book *The Road Ahead*, sites are electronically networked by a former teacher turned entrepreneur. The moderator asks probing questions, keeps the discussion moving, and makes sure all participants take an active part in the discussion.

CREATING A NATIONAL INSTITUTE FOR TEACHERS' PROFESSIONAL DEVELOPMENT

These grassroots, professionally devised networks, and especially the writing movement, marry teaching and applied research to create common ground for teachers and researchers working together to solve a shared problem. When teachers and researchers get together in genuinely collaborative partnerships, they produce valuable results. Such partnerships overcome the isolation of teachers, build knowledge and skills, and make subject-matter resources available to students. NFIE suggests that teacher-scholar networks in all subjects should be fostered and sustained both locally in new or existing institutions dedicated to professional development and nationally through a national institute. A national institute could house the leading edge of applied research, sustain and encourage experimentation in teaching each

subject, and provide demonstrations, models, and exemplary materials for dissemination. It could be a base for visiting, nationally certified teachers to work with scholars and teacher leaders on special projects. It could explore applications of databases in the arts and sciences for school use and sustain electronic networks for teachers.

Sustained funding for such activities and adequate dissemination are the most important ingredients that are lacking in the current reform effort. The National Center for History in the Schools based at UCLA and the Organization of American Historians (a consortium of teachers and scholars from a variety of associations) have for years invited teachers and scholars to join in selecting primary resource documents in history and designing appropriate school activities for various age groups with guides for teachers. The packets are inexpensive, easily reproduced, well laid out, and immensely useful. Several hundred are currently available, with titles such as *Women of the American Revolution* (grades 5 to 8); *The Port Royal Experiment: Forty Acres and a Mule?* (grades 8 to 12); *The People's Republic of China: Who Should Own the Land?* (grades 7 to 10); and *The Golden Age of Greece: Imperial Democracy 500-400 B.C.* (grades 6 to 12, this one a 168-page book). Work of this kind is *basic*. It allows a scholar and a teacher to work closely together; sustains professional development for both, as the scholar learns to think about teaching and the teacher reads in depth in current scholarship; and produces a document of value to other teachers and students. Such materials should eventually replace dull textbooks, enabling students to read original documents and, when supplemented with visits to museums in person or via the Internet, view artworks and other related historical objects. The cost of creating such materials is minimal, and schools eventually will be able to reduce textbook purchases substantially by using them instead. The proposed national institute for professional development should ensure that this kind of work is promoted in all subjects. Defining the work and role for a national institute should be carried out by teachers' organizations, specialized professional associations, and scholarly and scientific bodies, all of whom should advise policymakers. The national institute should promote exemplary work to advance teachers' professional development throughout the United States.

CREATING LOCAL HOMES FOR PROFESSIONAL PARTNERSHIPS

In a recent American Association for Higher Education (AAHE) survey, 861 colleges and universities of the 2,594 polled (two-thirds public, one-third private) reported 2,322 partnership programs with schools, most of which were conducted by academics other than teacher educators (Albert and Wilbur 1996). Nearly two-thirds of these partnerships were with high schools, one-third were with middle schools, and another 26 percent were with elementary schools (many programs served multiple levels of schooling, hence the total of levels served exceeds the number of partnerships). More than half of these programs started up in the past five years. The partnerships are largely urban, and slightly over half are devoted to direct services to school students. Only 29 percent are dedicated to professional development for teachers and school administrators.

AAHE houses the Education Trust, an agency that promotes K-16 councils, school-university partnerships to design local goals for students, improve and change school-to-university transitions, support teacher networks and subject-based academic alliances, and generally aim

for a seamless education enterprise among all institutions working together on behalf of all local students. The American Association of Colleges and Universities has also done exemplary work in linking schools with higher education for many years that has had a significant impact on improving college as well as school curricula and instruction. Partnerships among schools, universities, businesses, and communities have been flourishing since the late 1970s, when the Ford Foundation began to fashion such partnerships in "local education funds." Currently operating in forty-seven urban areas, public education funds often have strong business and foundation support (Philadelphia; Los Angeles; Denver; Worcester, Massachusetts), have ties to universities and cultural agencies and to school districts, and serve teachers' professional development needs with philanthropic support. Like the K-16 councils, local education funds are not strongly linked to school or state policy. And although their work does great good by designing models of excellence in professional development programming and community partnering, few have been able to effect systemic changes.

Most such university-school partnerships are designed not to create policy change, but to provide critical friends for public education. They often include teachers' representatives on their boards alongside corporate CEOs, superintendents, and school board members, but they also often operate in parallel to the district's in-house professional development work and the teachers' organization efforts to increase school-based decision making. NFIE recommends that local education funds and K-16 councils join forces with teachers' organizations to establish strong links for their work in local schools. Existing alliances and consortia are important first steps, but schools will not change or improve until and unless powerful partnerships are built into the system.

Federal agencies support a number of important efforts to build subject-matter learning into school reform. The National Science Foundation's systemic initiatives in urban, rural, and state settings are designed to build partnerships among schools, universities, and other school reform networks and agencies. The National Humanities Center (NHC) in Research Triangle Park, North Carolina, primarily an academic research center, has for some years offered professional development programs for high school teachers in the state. Working with approximately one-quarter of a given school faculty at a time, the NHC helps design seminars and planning sessions to address curricular needs identified by the teachers. Participants describe the program as "10,000 times better than our normal in-service days." Solicited by the teachers and jointly designed with academics, the program spans two years—the first for planning and the second for study. Long-range funding for the NHC's work with teachers and strong links to state, district, and school professional development funding and curriculum policy are needed.

The federal government has provided a legion of teachers with excellent professional development over the years. The *content* of the programs has been superb; their impact on individual teachers' knowledge has been profound and lasting. But their impact on school change has been minimal. A federal program that was mentioned numerous times by older teachers dates back to the 1960s. Jim Griess, executive director of the Nebraska State Education Association, remembered: "When I taught history, the National Defense Education Act (NDEA) summer institutes helped to provide an excellent professional development experience. It brought interested teachers together to plan and teach units under the

guidance of excellent higher education faculty. It was a partnership, and it [repeated] over several summers." Early in his teaching career in 1966 and 1967, James Walsh attended two NDEA institutes for seven or eight weeks in each of those summers. "It opened up my life," says Walsh, who is now superintendent of the public schools in Brookline, Massachusetts, where he encourages all faculty to reach out for learning opportunities in the fields they teach. NDEA programs that flourished nearly thirty years ago continue to form the foundation of learning of many science, mathematics, language, and history teachers. The design and purpose of these programs have been repeated countless times by government and private, non-profit agencies of all kinds. We know how to do these things. We do not yet know how to make them an effective and fundamental part of school change.

Such national programs profoundly affect individuals and set the pace for high-quality local work, but only the local partnerships can work to instill their learning into the local curriculum. Because the school is the basic unit of change, individuals in the school must study to effect change, and school staffs must have the power to effect change based on that study. Teachers need powerfully connected centers for study, but they also need larger networks and alliances that draw them together with scholars and others working in common cause. Academic alliances are forms of networks that took shape in the 1980s to provide local opportunities for teachers and academics to share study. The earliest of these were foreign language alliances. Even the largest schools usually have only a single teacher of French or Spanish, or at best, two. These teachers spend most of their day teaching beginning levels of the language. Language teachers preeminently need a social context to keep their skills well honed. Without continued practice at advanced levels, teachers run the risk of serious loss of skill. This is as great a need for higher education teachers, who are often equally isolated from other speakers in their languages. Academic alliances flourish in rural areas and small towns where other options for cultural exchange and language use are limited. Operating like subject-based clubs, such alliances of teachers in schools and colleges cost little and benefit all members by creating small study communities in specialized fields. Local partnerships can provide a home base for existing alliances and promote their creation for new subjects to stimulate cross-fertilization among interested teachers and scholars from a variety of institutions.

The WTEPE, which started Overland and her third graders on a grand scientific odyssey, has been available to teachers in every subject area since the 1960s. Study opportunities in the arts and sciences have been funded with grants from the National Science Foundation, the National Endowment for the Humanities, the National Endowment for the Arts, and private foundations such as the Ford Foundation, the Rockefeller Foundation, the Kellogg Foundation, and a host of others, large and small, national, regional, and local. The soul of such programs has been the desire to make available to schoolteachers rich ideas, materials and resources in the arts and sciences, to update teachers on new approaches to these subjects, to provide hands-on experiences for teachers and students, to enter into seamless partnership with the public from kindergarten through graduate school, and to help make learning an exciting exploration for young people well beyond the two-column dullness of textbooks and mechanical scoring of worksheets.

All these programs have had a history of being voluntary for teachers, and most have been designed to attract individual teacher applicants willing to devote a few summer weeks to

intensive study with college professors. It is hard to gauge how many teachers have participated over the past thirty years; but in each of NFIE's focus groups with NEA leaders over the past year, some 10 to 20 percent have cited such programs as "the best professional growth experience I have had," often harking back a decade or two to describe a particular science or history program's profound influence. When NFIE surveyed teachers on what policy changes they would recommend to improve their professional growth, 66 percent said they would definitely support and 27 percent said they would probably support the need to "establish professional growth opportunities that provide the means for teachers to collaborate with university faculty, businesses, the scientific community, and cultural organizations."

Legislation in Florida and elsewhere has proven effective in enabling such collaboration. Florida's Teacher Education Act of 1973 created regional teacher centers throughout the state and assigned the responsibility for operating these centers "jointly to the colleges and universities, to the district school boards, and to the teaching profession." By a stroke of the pen, this act legislated the "common search for the most beneficial educational experiences for the students" that higher education shares with public school teachers. The Dade-Monroe Teacher Education Center (TEC) in Miami, for example, is led by a teacher director, includes representation from the local teachers' organization on its board, and for years has collaborated with a number of area universities in a highly productive enterprise designed to provide high-quality professional development opportunities for local teachers. Across the state, the Pinellas County TEC, with its emphasis on Total Quality Management, is a resource for teachers for their work in restructuring schools.

Other states have also passed model legislation. Missouri's 1993 Outstanding Schools Act legislates two separate allocations of 1 percent of state education funds each for teachers' professional development, one for district-level work and the other for state-level work. Each 1 percent works out to approximately \$10 million in statewide support. District-level dollars are spent for purposes determined by committees, generally on traditional forms of professional development, such as support to attend conferences and workshops, to bring in speakers, and for curriculum development and materials. At the state level, ongoing investments in such programs as ReLearning and Accelerated Schools are supported through the 1 percent mandate. Some of the state funding is being used to set up regional professional-development centers that are expected to become self-supporting after three years.

The Missouri allocation of funds sets an important precedent but is vague about what the centers or districts are to *do*. Because forward-looking guidance is lacking, much of the work continues traditional forms of professional development. The three-year limit of tax-based support for regional centers should be extended indefinitely to provide a long-term home for this work. Each center will soon be looking for grant support, which is scarce and inadequate; consequently, few have a hope of long-term survival.

Districts, teachers' organizations, and universities have also created model agreements to serve large urban settings. One model for effecting exchange of services is the agreement among Ohio State University (OSU), the school districts in Franklin County, and their local teachers' organizations. This agreement provides university credit available for use by teachers in the participating districts in exchange for opportunities for OSU faculty and students to conduct research and other fieldwork in the public schools (Zimpher 1995). This arrangement

has afforded all manner of learning opportunities for teachers in the Columbus Public Schools, whose local NEA affiliate has been instrumental in keeping the agreement alive and active. Columbus Education Association President John Grossman comments, "We need written documents to keep us in business when personalities change." The association has included the "college scribe" arrangement in the teachers' contract in order to use this valuable resource equitably and most effectively.

Other models of state support for professional development partnerships include California's state curriculum frameworks, which were matched with the creation of statewide subject-matter collaboratives where teams of teachers from schools studied together. Kentucky provides \$23 per pupil to each school for professional development for school-level use. And in Vermont, teachers' required professional improvement plans are reviewed and approved by local professional standards boards established by a state professional standards board, all of which have teacher majorities.

Features of all these pieces of state legislation need to be combined for long-term support of university-school partnerships and enhanced with strong links to standards for high-quality professional development. Diane Massell and Susan Fuhrman tell us that "part of the resource problem is that staff development lacks political legs" (1994, 50). Specialized professional associations need to be active partners with scholars' associations and teachers' organizations in drafting legislation in order to ensure that their work is formally recognized and powerfully incorporated into what teachers learn. Neither scholars' nor teachers' subject associations have yet gained a power base at the state level, where education is legislated. University power is often exercised in statehouses; in many states, education legislation often reflects the wishes of the largest producers of teachers in the state. But the influence of arts and science power has been singularly missing in state policies regarding teachers' professional development. Teachers' organizations and subject-matter associations can and should reach out to their counterparts in the scholarly world—the American Association for the Advancement of Science, the American Council of Learned Societies, their respective member associations in each of the arts and science fields, the American Association of Museums, and the American Library Association, to name the most obvious groups—to work together on behalf of strong state legislation for tax-supported local or regional partnerships. Such legislation should be designed to broaden, deepen, and enrich what teachers learn well beyond education-focused subjects in order to bring the world into the classroom and reconnect teachers with researchers in each of the disciplines. And such legislation should pay heed to building into higher education institutions faculty incentives and rewards for such work. These entities, funded by state, district, and university support, should become a permanent feature of the landscape. They should be fully cooperative enterprises between teachers and researchers (and artists, curators, and others), with teachers making up the majority on their independent boards.

The core of the proposed entities exists already in many locales. Business-school partnerships such as the Mayerson Academy in Cincinnati, public education funds such as the Public Education and Business Coalition in Denver, subject-specific work sponsored by state humanities councils such as the Humanities Alliance in Connecticut, museum-based programs such as those centered at the Franklin Institute Science Museum in Philadelphia, arts advocates such as COMPAS in St. Paul, university-based programs such as K-16 Councils, and untold

numbers of other agencies and consortia already serve teachers well in local, regional, statewide, or national programs.

Where such programs already exist, states should support their enhancement to serve all teachers in the region; and where none exist, they can be created by drawing on high-quality expertise from suitable nearby institutions. Where access to high-quality resources is limited, states should provide support for teachers to travel to and hold residencies at available study centers and provide similar support for resource personnel to travel to schools for extended residencies. Enhancing distance learning will also be necessary in many locales but cannot completely supplant in-person, hands-on learning.

Such entities should also become proving grounds for some of the most difficult work in the world, such as developing actual curricula that flesh out subject standards and periodic reviews of how and when to incorporate emerging knowledge into schooling (Wheelock 1995). Discussions of this

kind were conducted by the privileged few teachers and scholars who have labored over the past decade to create curriculum standards and frameworks, but all teachers and scholars need to conduct similar conversa-

Partnerships should create the common ground where teachers, researchers, curators, artists, scientists, and others can make that transition between what's new and what should be taught, what needs to enter the schools and what else must therefore drop out, and where what's esoteric and theoretical becomes understandable, concrete, and teachable.

tions at the local level and should probably repeat the process at ten-year intervals. A curriculum cannot be taken off a shelf the day before you begin to teach it. Every teacher needs to be broadly and deeply engaged in its development and periodic revision.

Partnerships should create the common ground where teachers, researchers, curators, artists, scientists, and others can make that transition between what's new and what should be taught, what needs to enter the schools and what else must therefore drop out, and where what's esoteric and theoretical becomes understandable, concrete, and teachable. This is work that has been left to textbook manufacturers most of the time or conducted by a few teachers and scholars working with scarce grant dollars a little of the time, but that needs to become a regular feature of all teachers' work.

Partnerships will need to reach beyond the confines of locally available information and stay in touch with nationally and internationally important developments. They could house and support applied research and communicate it to teachers on-line.

It is vital that participation in partnerships include substantial numbers of faculty from a given school in their programs at any given time and that programs are designed to meet whole-school and whole-department or grade group needs within schools whenever possible. Individual teachers can and should continue their studies on their own and as they choose, but individuals cannot by themselves create lasting change in schools. That has been proven in program after program. School staffs with decision-making authority can and should refer to state standards and reach out to local partnerships for the appropriate, long-range arts and science learning they need to enrich their students' experience.

NFIE's focus groups revealed that the public views technology as a new "basic," as fundamental for learning as the skills of reading, writing, and calculating. Yet for schools to use technology effectively, their teachers must be trained in its use. Bringing information technologies into the public schools and helping teachers recast their practice to use technology wisely may drive the rest of the professional development agenda more rapidly in the years ahead.

Incorporating technology into schools has been identified as a priority for business leaders and governors, the Vice President's national infrastructure commission, students, and the public.

America's teachers are hungry not only to learn how to use information technologies but also to adapt teaching to incorporate their use most effectively for student achievement.

In a recent discussion of public investment in infrastructure, the Economic Policy Institute recommended the creation of a human capital fund to match and support an infrastructure fund (Baker and Schafer 1995). In short, machinery can only

be built, maintained, and well used if people are capable of doing the work. America's teachers are hungry not only to learn how to use information technologies but also to adapt teaching to incorporate their use most effectively for student achievement. The Greenberg study for NFIE showed 93 percent of teachers ranking technology as their priority for professional development, equaled only by their eagerness to learn how to involve parents more closely in student learning and by their interest in peer assistance. These three top concerns of teachers are the linchpins of this report.

With this high level of agreement among the public, business, policymakers, and educators, which is perhaps unprecedented in any other education issue, putting technology to work in our schools should be a priority action immediately undertaken by all stakeholders. As of 1991, few of the nation's teachers were regularly using on-line databases (NEA 1992). In such a

"I think you have to look at the way the day and age [are] going, and there is no way you can ignore it, everything is going toward technology [and] computers. . . . Everything is taking off and if [you're] not taking off with everyone else, you're going to be left behind."

PUBLIC FOCUS GROUP PARTICIPANT
IN PUBLIC AGENDA 1995

rapidly changing field, five-year-old surveys are ancient history, but several interesting patterns emerged in that study. Elementary teachers used the equipment significantly more often for instructional purposes than secondary teachers did. This

may be due to the ready availability of software for drilling basic skills. But the incorporation of the computer in the classroom has gone far beyond merely allowing the machine to replicate rote learning.

To date, the integration of technology into teaching and learning as a tool for challenging and meaningful study has been more a goal than a reality. The spotty record of success has resulted from teachers' limited access to technology, inadequate or nonexistent planning, rapid advances in hardware and software, antiquated or deteriorating school facilities, and limited budgets for maintenance. Even good technology plans and abundant, state-of-the-art equip-

ment and software, are still insufficient to ensure the integrated use of technology in most classrooms. Well-trained, knowledgeable teachers are essential to successful, high-quality use of information technologies for student learning. Technology cannot be "teacher-proofed," nor can it replace teachers.

Several studies have reported that information technologies used wisely substantially increase achievement in schools (Fletcher 1989; Sivin-Kachala and Bialo 1995). In addition to building skills, technology can motivate students to become self-starters and researchers, improve their writing, find multiple ways of presenting their conclusions and arguments, interact confidently and productively with peers and adults, and see themselves as successful problem solvers. Wise use of infor-

mation technologies, however, means more than just replicating traditional teaching devices; it also means exploring the ways in which tech-

Well-trained, knowledgeable teachers are essential to successful, high-quality use of information technologies for student learning.

nologies can promote unique and more effective approaches to learning in all areas. Early uses of computers, for example, often focused on drill exercises that allowed each child to practice isolated skills in subjects such as grammar or arithmetic. Such work mimics paper and pencil or oral rote learning but provides for individualized practice, self-selected pacing, and instant feedback in a motivating, nonjudgmental environment as a student moves forward through a program of exercises.

Computer drill can individualize skill acquisition or enable students to succeed where traditional rote methods have failed. But using technology to stimulate the extensive use of writing and revision as a mode of communication is widespread, and encouraging students to conduct research, produce multimedia presentations of their findings, interact with specialists in the subjects they are studying, collaborate on learning projects with students around the world, stimulate inquiry and problem solving, and even create brand-new knowledge are among the more sophisticated approaches being tried by teachers with students at all age levels.

Professional Development in Technology. To create such student-initiated uses of technology, teachers need extensive professional development. NFIE has learned that teachers need to become confident users of the equipment and of appropriate software; they need to interact with the technology tools in ways that will model their expectations for students; they need to refocus their own role as guides and coaches; and they need to build on electronically linked networks of their peers with similar teaching interests. Becoming confident and capable teachers who use technology to its full potential for children requires sustained on- and off-site mentoring and professional development. Given that innovations in technology are proceeding at a dizzying pace, this professional development may need to continue at a high level of intensity for all teachers for a considerable stretch of time.

Most teachers report that they have not received adequate professional development to integrate technology into their classroom activities (Anderson 1993). Most training offered to support teachers' use of technology occurs in workshops outside of classrooms and is limited to operational aspects of hardware, software, or networking (U.S. Congress 1995). Informal peer-to-peer assistance and individual study, the other most common ways teachers learn to use infor-

mation technologies, rely on individual initiative and happenstance access to experienced, technology-using educators.

Technology-related professional development should be multilayered, mixing operational workshops with modeling by expert teachers, in-classroom coaching, small-group practice, and other formats that have a specific purpose and that are focused on the needs of particular groups of students.

For example, the Tennessee Education Association (TEA) saw the need to provide an introduction to instructional uses of technology for teachers who had limited experience with computers and were hesitant about their ability to use computers in the classroom. TEA developed a classroom-focused professional development program that became the model for the state. In addition to workshops held at the TEA Technology Classroom in Nashville, the staff provided customized professional growth experiences for school faculties throughout the state.

The NFIE teacher survey confirms that NEA members of all ages and levels of experience are eager for professional development in technology. Libby Black, director of the Boulder Valley Public Schools Internet Project, explains that there are two ways to use the Internet:

"The real impact is how we have [used technology to change] our teaching methods, our classrooms, and our curriculum to meet what we feel are the needs of our students. They are learning to locate resources, collaborating to solve problems, and communicating intelligently with both peers and adults. . . . Teachers are learning that we don't have all the answers, and that we want our students to actually find the answers."

GENE BIAS,
CLASSROOM TEACHER, ORLANDO, FLORIDA
IN ROCKMAN 1995:8

(1) to support the way teachers already teach and integrate it into the existing curriculum and (2) to help change the way teachers operate in the classroom. "The latter is much more difficult." It requires redesigning the curriculum. She says

that Boulder Valley is trying to figure out how to structure staff development to facilitate this end. Black says that one tries to support teachers with the vision of technology's potential for teaching and learning. It is important to align this with content standards and new instructional approaches. "I don't know exactly how to go about integrating all of these things," says Black.

No one quite knows how to do what Black—and most teachers—are aware needs to be done. NFIE has been supporting teams of educators nationwide for a decade to try to find out and currently supports thirty-two nationwide projects exploring a broad array of pilot programs. After years of research on technology-rich environments, Apple Classrooms of Tomorrow acknowledged the crucial role of professional development in the successful instructional use of computers by creating four professional development resource centers in schools around the country.

Changing Roles for Teachers. What we have learned so far is that the use of information and multimedia technologies can accelerate changes in teachers' roles. Such changes, including becoming coaches and facilitators of student-initiated work, are hastened when students are placed at the controls of the technology and hence in direct touch with information unmediat-

ed by textbooks, manuals, and prescribed activities. Teachers learn to step aside from the front of the classroom to let students become organizers of their own learning and creators of knowledge. Although such role shifts are occurring in relation to teaching in general, technology use precipitates the changes.

For example, one of the Vermont middle school teachers who participated from 1992 through 1994 in a statewide project supported by NFIE's Learning Tomorrow program reported what happened when his students gathered information to prove or disprove a group-developed hypothesis regarding a current public policy issue:

There was no way I could do it for them. . . . The technology combined with the number of issues both allowed and forced the change in the expectations of the students. . . . My role was to help with spelling and buy more cardboard! . . . My class had enjoyed the "new way of learning" in which they were given choice and responsibility (Lewis 1994, 2).

Another teacher who took part in the Vermont project wrote:

The students received direction and information electronically (by computer and modem). This was a totally new experience for these students. Not only did they learn about a specific topic, but they had to learn how to use new hardware and software. Eighth period became a whole new way to learn. . . .

Students need to know that they are capable learners. This project allowed students to discover that they can learn on their own with some direction from an adult. For the first time ever, these students conducted research, collated data and presented their findings without having a teacher in front of them [every day] telling them what to do. They emerged as independent learners able to find and do what they needed to be successful with this project. I was very proud of my students for what they accomplished and hope they will continue to have opportunities to learn this way and be independent thinkers (Donahue 1994, 1, 3).

At the start of the project, students could read graphs; at its conclusion, they were producing and entering their own graphic and other supporting data. They learned mathematics, science, and geography and improved their reading and writing. They took over the class. The teachers "learned along with [the] students" (Barry 1994, 8). The learning about technology and public policy was as great for teachers as it was for students; and for teachers, it was a whole new way of experiencing teaching and learning. Students quickly became adept at consulting legislators, scholars, parents, and community members as easily as their other cyberspace partners and each other. In one of the Vermont schools, parents demanded the entire curriculum shift to project-based learning as a result of the success of the program.

NFIE has discovered that many schools find it necessary to establish the role of technology coordinator. Among the responsibilities of a technology coordinator are advising administrators and teachers on the selection of hardware and software and providing the technical assistance necessary for other faculty members to integrate technology into the curriculum. This work needs to be rooted in instruction and in the evolving understanding of how technologies support student-centered learning. The duties of a technology coordinator, however, often become the *de facto* responsibility of a teacher who happens to be an enthusiastic early adopter of technology in the school and are simply added to his or her other teaching duties.

Standards for fulfilling such a role, reduced duties of other kinds, and time to work with colleagues all have yet to be worked out.

NFIE also found from its many technology projects that some of the new technology roles tempt interested educators out of teaching. Although electronic networks can help teachers overcome isolation by connecting them with others who share their interests in learning communities, the success of these on-line communities depends on the existence of people who stimulate discussion and pass on the best of their learning to others. Such networks, as well as those for student use, have created a need for moderators who facilitate on-line discussion and provide technical assistance to users and for on-line editors who edit and publish informative discussions among communities of learners. Teachers who become interested in supporting electronic collegial networks usually find that they must leave teaching because existing parameters, such as district boundaries or school hours, do not accommodate their engaging in such intensive on-line work. That much of the best such work in education has been supported by limited-term grants (e.g., Breadnet and NFIE's electronic networks) exacerbates the situation. To sustain their new roles, these teachers often either go to work for technology companies that market products to education or become independent entrepreneurs. Teachers' organizations, states, districts, and education technology specialists should initiate discussions to consider how to support these new teaching roles, to design them, to develop standards for them, and to find appropriate homes for them. Some of these roles should be housed in schools or districts; others serve entire states, regions, and the nation and could best be housed in state, regional, or national organizations.

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Some of the most powerful technology resources, such as large historical and scientific databases and multimedia development tools or three-dimensional rendering software originally created for business or scholarly research, are not practical for instructional use in

their "pure" form and must be mediated before teachers find them adaptable to K-12 learning. These tools can be the source of the most current and accurate information in the subjects and can enable students to learn in new ways. They are, however, often very complex. A user must have not only the subject-matter knowledge but also the time to become adept at gaining access to and using each of these resources and the instructional-design knowledge to figure out how they can be applied to specific curriculum objectives. Without such help, these rich sources for learning are bypassed by K-12 teachers. Teachers and scholars need to work together to make these technology resources accessible to teachers and applicable to student learning.

Professional organizations such as the American Association for the Advancement of Science, the American Library Association, and the American Council of Learned Societies should join with teachers' associations of all kinds in promoting this fundamental work to make emerging research bases, texts, documents, images, and other information available and accessible to all public school teachers and students.

A recently organized consortium, the National Initiative for a Networked Cultural Heritage, proposes to link major American art and museum collections, libraries, archives, historical doc-

uments and databases, and related research conversations. As such interconnections develop, it is crucial that teachers have a major presence at the table to assist in designing them for school use. To date, the national discussions of the "information superhighway" have not sufficiently reflected either scholars' or teachers' needs, nor have they provided avenues for scholars and teachers to make common cause. Their respective professional associations urgently need to join hands to assure that information resources are accessible in forms that will readily welcome students and teachers into a new

adventure in learning. We cannot rely on the commercial sector to serve this function. Although commercial

services have developed for the delivery of knowledge on-line in a form accessible to teachers and students, the connection of schools to scholarship is not likely to be a profitable enterprise. Large successes such as National Geographic Kids' Network are few. The more challenging and demanding the conversation and the subject matter, the more an on-line moderator will be needed.

A Glimpse of the Future. We are facing an era when the creation of knowledge will increasingly take place in schools, where staff and students create small communities of learners, and in cyberspace, where these learners will be linked to the world. Not every teacher in the future will be working in schools. Some will be responsible for networking teachers and students via the Internet; some will be responsible for mediating and relating information available from the Internet so that it is useful to teachers and students. These teachers need a place to inhabit and a permanent position to fill that is vital to the development of educational technology. States should begin to recognize that need by supporting such positions, and resources should be made available for teachers to band together to develop models and standards for their work.

Identifying ways to address the organizational, developmental, and professional issues that emerge as a result of teachers assuming these new roles is a major priority. The responsibilities, structure, and compensation for these positions are among the questions that must be addressed if large numbers of teachers are going to use technology as a tool to facilitate active student learning.

Some technology leadership roles *must* be filled by experienced teachers familiar with the local students; others require expertise in curriculum design, subject matter, information retrieval, and technology applications. If we fail to provide positions in our schools for gifted technology users, we will continue to lose them from the teaching ranks. Although the work of these former teachers serves education in the most fundamental sense, rarely does our educational system provide a place and the incentive for expert technology-using teachers to remain in schools working with their colleagues to improve student learning.

Part-time, periodic staffing assignments to local partnership entities and the national institute to carry out technology-based work should be a goal for teachers' organizations, special-

To date, the national discussions of the "information superhighway" have not sufficiently reflected either scholars' or teachers' needs, nor have they provided avenues for scholars and teachers to make common cause.

ized associations, states, and districts. Joint appointments in districts and universities or partnerships for teachers expert in professional development for peers and computer-based instructional

Teachers and students need time to work with computers, resources to invest in productive learning, leadership to access valuable instructional approaches, and partners in the community, business, universities, and states to pull it all together meaningfully.

research is another option.

The issues that must be considered in making technology a useful tool for schools provide a metaphor for this entire report and press hard for change in every aspect of a teachers' learn-

ing. Teachers and students need *time* to work with computers, *resources* to invest in productive learning, *leadership* to access valuable instructional approaches, and *partners* in the community, business, universities, and states to pull it all together meaningfully so that *students*—and they are what this is all about—can learn.

Let us end where we began, with the words of a teacher. Barbara Heinzman teaches fifth grade in Geneva, New York. Her district is a Learning Lab, one of the NEA's network of site-based decision-making demonstration schools, and is also the recipient of NFIE support.

As I reflect upon the last twenty-five years of my life as a teacher, I never thought that anything could be as fresh and as exciting as my first few years of teaching. How wrong I was!

Over the years, I've been to innumerable workshops, attended conferences that promised to solve all of my problems, and participated in programs that were the answer to—well, I'm not sure what. Throughout those years, I came to realize that there is no one answer to all the problems we as teachers face in the classroom. There are no "cure-alls. . ."

Then, thanks to our superintendent, George Kiley, and my principal, Mary Luckern, came the computers and the training to go with them. Six computers were set up in my room. . . . It was exciting, but very overwhelming. Could I do this and everything else, too? . . . For me, the past three years have been the best.

Maintaining this level of enthusiasm for teaching and learning is the goal of this report. Professional development in using technology and seeing students succeed as a result should make every classroom in America an adventure for students and teachers that prepares students for their future *and* that leaves the twenty-five-year teaching veterans in those classrooms eagerly preparing themselves to keep on learning something new.

FIND COMMON GROUND: WORK WITH THE COMMUNITY TO PROVIDE HIGH-QUALITY PROFESSIONAL DEVELOPMENT

Teachers are emerging from the isolation of the classroom to reach out to peers, to parents, to other professionals, and to community resources. To achieve success for all students, existing partnerships must be strengthened and new partnerships created in every locale and at the national level, and information technologies should be used throughout. Partnerships will support student learning in and out of school and create networks of learners among students, parents, teachers, scholars, artists, scientists, curators, librarians, business, and community. To bring the world to the classroom and raise young people for success in the world, teachers and their partners will have to create a new common ground.

1. INVOLVE PARENTS, BUSINESS, AND COMMUNITY

At the local level, parents, business, and the community should continue to help schools set the vision for students' success and support teachers' learning. Business should provide employees greater time and opportunity to be active partners in teachers' and students' learning. Parents, communities, and business should work in partnership with schools to reach these goals.

2. COMMUNITY INVENTORY AND PLAN

Teachers' organizations should collaborate with districts to invite local leaders to join in conducting an inventory of available local resources and institutions for teachers' professional growth, including higher education, business, cultural, scientific, and other relevant agencies. "Higher education" should be understood to include entire institutions in all fields and branches. Having conducted the inventory, these partnering institutions should prepare a plan to join with teachers and districts for long-term collaboration for teachers' professional development. Districts and schools should support teachers' incorporation of the results of this professional development in instruction. Schools should provide time and opportunity for teachers and parents to become partners in the education of students. States should review local inventories and partnership plans to produce statewide analyses of teachers' access to high-quality resources for professional development. Based on these findings, states should develop plans for assuring that such access is sufficient for all teachers.

RECOMMENDATIONS

3. ESTABLISH NEW OR ENHANCE EXISTING PARTNERSHIPS

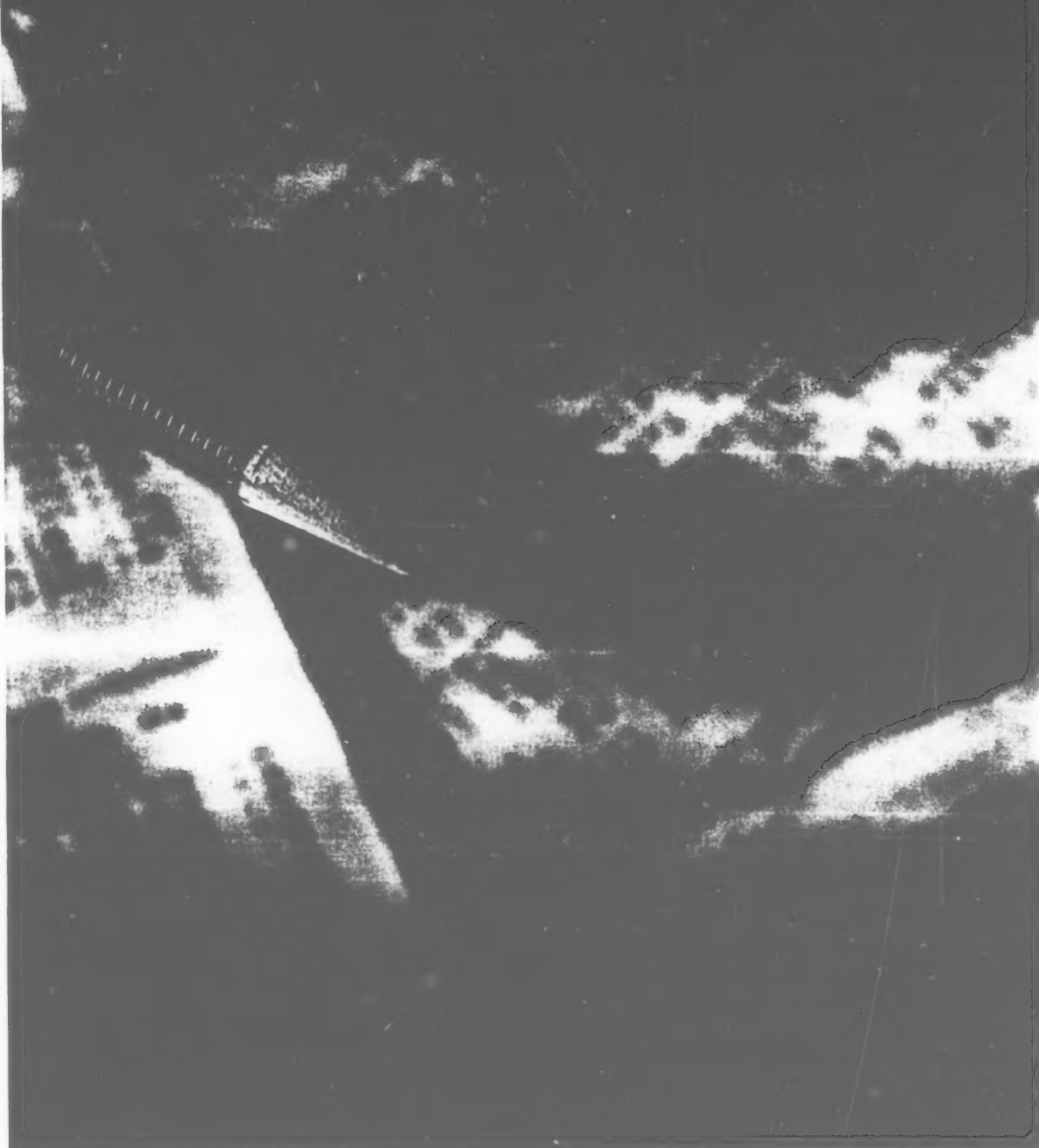
Many local entities—called teachers' "centers," "academies," "partnerships," "local education funds," or other designations—have been established by districts, states, businesses, higher education, and others over recent years to bring teachers together with other professionals for learning. Each district and state should assure that teachers and resource providers enhance existing entities or establish new ones where teachers, librarians, scholars, scientists, artists, information technology specialists, and others can conduct work they hold and create in common. This work differs both from the profession-building work of peer assistance based in schools, on the one hand, and from scholarship, curatorship, and artistry conducted outside of schools, on the other, and therefore can best flourish in a setting understood to create common ground for both. Each state should assure that partnerships to conduct high-quality professional development, curriculum and assessment development, and the development of technology-based teaching and learning are accessible to all teachers in that state.

4. NATIONAL INSTITUTE

The federal government should establish a national institute for teachers' professional development to support exemplary work that builds the profession. Teachers' organizations should join with specialized associations for educators, scholars, scientists, librarians, museums, and policymakers to develop the national institute.

5. INFORMATION TECHNOLOGIES

Local and national partnerships and entities should make information technologies an integral part of their planning and development and should help teachers use these technologies to maximum benefit.



V. FINDING THE REVENUES TO SUPPORT HIGH-QUALITY PROFESSIONAL DEVELOPMENT

We do not have full information about how much states and districts currently spend on professional development. Various studies recommend increasing expenditures by specific amounts or percentages, but the job of teaching envisioned and recommended by this report suggests a long-range goal of institutionalizing such expenditures and requiring all education funds to be supportive of teaching and learning. New expenditures may also be necessary to build high-quality professional development into the foundation of the teaching job. These can be calculated if states and districts will undertake an assessment of their current professional development expenditures, agree with teachers' organizations on appropriate measures of professional development effectiveness, and gain public support for new appropriations as needed.

The changes recommended in this report amount to a reconception of the teaching job and the institution called *school* in order to nurture good teaching and high achievement for all students. Given a vision of teachers as lifelong learners and of their learning as an essential part of the teaching job, and given the purpose of school as the academic and civic development of children, the entire budget and all activities of schools should focus on the improvement of teaching and learning.

To try to separate the costs of professional development from the costs of instruction poses dilemmas. The Greenberg survey results show that teachers define professional development as anything that improves instruction and student achievement. When teachers are attending a graduate school course or a conference, one can argue that such work is identifiably professional development. Yet when a group of teachers is studying student portfolios and developing for the first time a set of rubrics for good, average, and below-average writing, it is impossible to determine where instructional activity leaves off and professional development begins. Teachers also tell us that interactions with students constitute professional development. As they work with students, teachers get feedback on the effectiveness of their teaching, they learn new things directly, and they receive food for reflection on how to proceed. This report proposes a view of the teaching job as thoughtful interaction with students, teachers, parents, administrators, and community partners and as a learning experience in schools that are model learning organizations.

This may explain why researchers and policy advisers have been troubled when asked to investigate questions of current expenditures on professional development and proposed changes or increases in such expenditures. For instance, most school districts offer special salary increments for teachers who earn graduate degrees and credits, which can be considered a professional development investment. The costs of faculty supervision, provision of district-

led professional development workshops and programs, early release days, and professional days set aside for teachers' planning and learning are also among the major costs usually entered in calculations of district expenditures (Corcoran 1995b, 18-19).

Sometimes such expenditures on identifiable professional development have been compiled and percentages of operating budget calculated (Miller, Lord, and Dorney 1994). Deriving such figures and estimates is difficult, however. Few districts have a single identifiable professional development division or budget. Categorical programs, such as Titles I and II of the Elementary and Secondary Education Act, filter into schools via states with some funds specified or mandated for professional development; some of these funds are defined as state expenditures and counted again as district expenditures when states make grants to districts. The relation between state and district expenditures is further complicated by state support for "intermediate units" at county or regional levels that organize professional development, and states run conferences and workshops, send consultants to schools, subsidize college-based courses and programs for teachers, and reimburse districts for local budget increases resulting from teachers' earned graduate credit and salary increments (Corcoran 1995b, 19).

Reporting for the National Governors' Association, Thomas Corcoran recently estimated that 4 to 7 percent of district, less than 1 to more than 3 percent of state, and substantial figures for federal programs (not fully calculated from all sources, which is yet another and even more complex problem) are currently being spent on professional development. His conclusion was that significant public revenues are already dedicated by all levels of government to teachers' learning but that adequate accountability for their effectiveness is lacking (Corcoran 1995b, 19).

When recommending levels of expenditures to support NFIE's approach to professional development, one could use analogies from successful businesses and other professions or establish preferred percentages of time in which teachers would be engaged in professional development and then translate the time into personnel costs. The National Staff Development Council passed a resolution in 1996 calling for 10 percent of district budgets to be set aside for professional development and "25 percent of educator's work time . . . devoted to learning and collaboration with colleagues" (1996, 1). The National Commission on Teaching and America's Future discusses adding at least 1 percent to current education expenditures in each state, with a goal over time of 3 percent new expenditures, to be tied to results as measured by standards, and an additional 1 percent in new district-level matching funds.

According to analysts of corporate restructuring, "Leading U.S. companies—such as General Electric, IBM, Hewlett-Packard, ATT, Xerox, and Motorola—spend anywhere from \$1,150 to \$3,500 per employee annually on education and training" (Berger and Sikora 1994, 217). Berger and Sikora go on to excoriate these companies for spending too little on personnel learning. A major study of schools found comparable levels of expenditures in public schools. The Miller, Lord, and Dorney study (1994) identified a range of \$1,755 to \$3,529 spent per classroom teacher in four case studies.

The long-term goal is to integrate learning into the job of teaching and to perceive of expenditures on increasing teachers' quality as synonymous with school budgets as a whole.

At present, however, the system separates expenditures on teachers' learning from expenditures on teachers' instructional work. To get from the present isolation of instruction from professional development to the goal of fully integrating these activities, interim stages to align the expenditures will have to occur. The issue is less one of segregating identifiable costs of professional development than one of creating a learning organization totally devoted to improving instruction and student achievement. Procter & Gamble's Senior Vice President Robert Wehling points out that in businesses that are reconceiving themselves as learning organizations, corporate expenditures should be seen in context: The learning is part and parcel of the employee's job, occurring through reflective practice, teamwork, and the entire focus of the organization, not just an identified pullout or special event.

The cost of introducing technology to teachers has received special attention of late. According to the Office of Technology Assessment's *Teachers and Technology* study, Florida recently required that 30 percent of its technology-related allocation to schools be earmarked for training. Similarly, Texas recommended that school districts new to the use of technology set aside 30 percent of their technology funds for professional development, and the state of Washington spends 40 percent of its school technology budget on training (U. S. Congress 1995, 137).

Major transformations of teaching practice, such as the use of portfolios in the Pittsburgh Public Schools from the mid-1980s to early 1990s, have been successfully introduced into schools at an annual per-teacher cost of \$6,000 in each of four years of intensive work (Rényi 1994a). These costs covered extra staff development hours beyond the regular school day on a weekly or biweekly basis throughout the school year, intensive summer institutes, consultants, materials, and release time for teacher leaders and administrators. To implement major changes (e.g., introducing project-based curricula, portfolio assessment, or similar large-scale major changes in schoolwide practice), one-quarter of each school faculty should be engaged annually in an intensive level of work (one month per summer and weekly study throughout the school year for a minimum of three years) using district and state matching funds. Funds at this level can already be found in many districts through devolving district-level expenditures on profes-

The pressure to introduce technology and concurrent recognition that training is essential are comparable to the scale and level of consensus in the public's endorsement of the professional development in mathematics, science, and foreign languages called for in the 1960s following the launching of Sputnik.

sional growth to schools and coordinating categorical programs (e.g., Title I and Title II) and state and other local professional development budgets. The key here is to focus on priorities and align district and school revenues and policy for

new learning to implement programs over a sufficient period of time to ensure the desired changes in practice. When such programs are designed to reach all faculty in a school or district over time, one-fourth of the faculty typically enters the program in each year and a minimum of seven years is required to observe and assess changed practice in all classrooms.

Such transformations of practice are now expected from the use of information technologies as major vehicles for learning. The pressure to introduce technology and concurrent recognition that training is essential are comparable to the scale and level of consensus in the public's

endorsement of the professional development in mathematics, science, and foreign languages called for in the 1960s following the launching of Sputnik. Some of the programs initiated then continue to support enhancements of these subjects today through grants from federal agencies. It is generally believed that technology training will need to intensify for a period of time while current teachers get up to speed and while we await a new generation of teachers to arrive on the job already technologically sophisticated. At present, however, choosing how much to spend on such preparedness education for teachers in a fast-changing world is a decision that seems to be made by districts, states, and even federal agencies on the basis of little factual knowledge of available revenues and needed new revenues.

NFIE's review of the new tasks and challenges that career teachers have faced since Sputnik suggests that there has been a steady stream of new work expected of schools, ever-higher expectations for achievement, and inclusion of an ever-larger percentage of the student population in that high achievement. With growing poverty among the nation's children, the ability of our public schools to keep producing better results for more students will depend for the foreseeable future on ever-harder work, better teaching, and constant effort to accommodate what is new. Although the current pressure for technology training may abate in future years, some other new changes will certainly arise to take its place.

Genuine reform can take place if we invest in what teachers know and can do on a large scale. The 3 million women and men who get up every morning to go to school need to become 3 million who go there to teach and to learn.

We might very well expect to introduce massive professional development initiatives on the scale of the mathematics and science push of the 1960s and the technology push of the 1990s for each generation to come. At the same time, ongoing professional development to help teachers keep up with all developments in subject matter, teaching methods, child development, social change, and school management will continue to be staples of the business of schooling.

To find the revenues for all this work, set-aside funding for professional development will be necessary at all levels. But set-asides are vulnerable to budget cuts in hard times and when new policymakers take office to enact new agendas.

Nowhere in the United States are all the pieces needed for reform in place, yet everywhere we see the hard work beginning. Genuine reform can take place if we invest in what teachers know and can do on a large scale. Those teachers are "the unsung heroes of the nation"—dedicated, hardworking, and overwhelmed (Boyer 1995, 6). The 3 million women and men who get up every morning to go to school need to become 3 million who go there to teach *and* to learn.

RECOMMENDATIONS

FIND THE REVENUES TO SUPPORT HIGH-QUALITY PROFESSIONAL DEVELOPMENT

The work ahead must begin with finding out reliably what is already being spent on teachers' professional development, whether it is being spent efficiently, and whether it is adequate to keeping up with change and enabling students to flourish. States and districts should work with community partners and teachers to reallocate existing and appropriate new revenues sufficient to guarantee standards-referenced, quality teaching and learning in every public school. The long-range goal over a period of ten to twenty years should be to rebuild the education system so as to dedicate all work in schools, all management, and all district, state, and federal K-12 education expenditures and activities to improving teaching and learning as measured by suitable standards for student achievement and teaching practice. Interim steps toward this reconception of the teaching job and school organization would include the following:

1. IDENTIFYING EXISTING EXPENDITURES

States and districts should work with teacher and community organizations to identify current expenditures specifically dedicated to teachers' professional development, reallocate existing expenditures as appropriate to realizing expanded teachers' roles, and determine the needed level of expenditure for professional development to accomplish student success. New or enhanced entities for local partnerships, such as those described in Chapter IV, should allocate district and community funds for supporting teachers' professional development.

2. ESTABLISHING APPROPRIATE MEASURES OF THE EFFECTIVENESS OF EXPENDITURES

Districts, states, teachers' organizations, and specialized associations should agree on appropriate standards for measuring the effectiveness of public expenditures on professional development.

NFIE will commence at once to support the implementation of these recommendations in model sites throughout the country and invites the profession and the public to join in support of their success.

APPENDIX A: SOURCES OF THIS REPORT

This report is based on two years of observations, consultations, surveys, and other studies. NFIE research staff conducted extensive site visits and interviewed teachers across the country. Research was conducted in collaboration with other national education research organizations. NFIE led a series of discussions and workshops with teacher leaders, read accounts of exemplary professional development experiences written by teachers, interviewed teachers, and commissioned public focus groups. A national survey was conducted for NFIE by Washington-based Greenberg Research, Inc., and The Feldman Group with support from the NEA Research Department and NFIE.

The work preparatory to this report began nearly a dozen years ago when NFIE launched the first of several well-documented programs designed to give teachers and other education personnel the financial resources, skills, and knowledge to lead efforts to improve education. These programs operated on the assumption that school reform and teacher capacity each reinforced and furthered the other. NFIE believed student achievement would improve if teachers had consistent, effective opportunities to enhance their classroom skills, curriculum expertise, ability to work with students from different backgrounds, and exposure to new educational technologies. Grantees found that the quality of teachers' on-the-job learning depended significantly on structural changes that delivered authority over budgets, time, and curriculum directly to those closest to the students. Assessment data from NFIE's Dropout Prevention Program, Christa McAuliffe Institute for Educational Pioneering, and Learning Tomorrow program, repeatedly confirmed this finding (Carlson 1990a; Christa McAuliffe

Institute Task Force 1992; NFIE 1987a, 1987c, 1990a, 1992, 1995b; Rockman 1995a, 1995b).

With this program-based knowledge in hand, NFIE began two years of observations, consultations, surveys, and other studies. Following deliberations by NFIE's Board of Directors to define the scope and direction of the research, staff members initiated a series of field observations at selected schools and districts across the country. NFIE chose these sites from a larger pool recommended by the U.S. Department of Education's regional educational laboratories and by an advisory group made up of educational researchers, teachers' organization leaders, and others with expertise in the field.

SITE VISITS

A research protocol guided a series of structured telephone interviews, followed by visits by NFIE research staff members to sites that represented diverse geographic locations, demographic characteristics, and sophisticated professional development. These sites—schools, districts, and organizations—included the ACT Academy in McKinney, Texas; the Bay Area Writing Project in Berkeley, California; the Bellevue (Washington) Public Schools; the Boulder Valley (Colorado) School District; the Columbus (Ohio) Public Schools; Connelly Middle School in Lewisburg, Tennessee; the Dade County (Florida) Public Schools and the Dade-Monroe Teacher Education Center; the New Iowa Schools Development Corporation; the Pinellas County (Florida) Schools; the Seattle (Washington) Public Schools; and the Tennessee Education Association Technology Classroom. In addition to extensive interviews and observations conducted at these locations, NFIE collected teacher perspectives, documentation, and other

data from scores of other schools, districts, and professional development programs across the country. The research protocol developed in conjunction with NFIE's research team guided these inquiries and included questions relating to the characteristics, staying power, cost, governing policies, evaluation, and supervision of the professional development work under examination, as well as its effects on student learning, its use of outside collaborators and resources, its incorporation of new technologies, and its relationship to teachers' organizations and other professional groups.

OTHER RESEARCH GROUPS

NFIE's research has operated in tandem and collaboration with the National Education Association, the National Commission on Teaching and America's Future, the Consortium for Policy Research in Education, the U.S. Department of Education's Office of Educational Research and Improvement and its National Recognition Program for Model Professional Development, the National Education Goals Panel, the American Federation of Teachers, and the Wisconsin Center for Education Research, all of which are concurrently addressing major related issues in building teachers' professionalism and improving public schools.

DISCUSSIONS AND WORKSHOPS WITH TEACHER LEADERS

NFIE's primary source of data for this report comes from the experiences of teachers and their analyses of what is needed to raise student achievement. NFIE conducted a series of discussions on professional development issues with the National Education Association's Executive Committee, Board of Directors, regional, state and executive staff, UniServ staff, and constituency groups, including the National Council of State Education Associations and the

National Council of Urban Education

Associations. These meetings yielded essential information relating to the role of advocacy, collective bargaining, and other negotiated agreements on the policies, practices, and structures affecting teachers' on-the-job learning.

TEACHERS' ESSAYS

Capturing the voices of practicing classroom teachers nationwide, their perspectives, opinions, ideas, observations, and analyses was a major purpose of NFIE's research. In addition to observations of teachers at work in schools and in-depth interviews, NFIE issued a call for accounts of exemplary professional development experiences through the National Education Association's *NEA Today*. The response to this request provided NFIE with first-person narratives of those events, experiences, and activities most profoundly affecting teachers' professional lives and their students' performance in the classroom. These stories illustrate parts of a larger picture showing the kinds of professional growth experiences that teachers themselves value and find fruitful for their work in the classroom.

TEACHER AND LEADER SURVEY

These images have been substantially reinforced by a comprehensive survey of experienced NEA teacher-members and elected leaders conducted by Washington-based Greenberg Research, Inc., and The Feldman Group for NFIE with support from the NEA Research Department and NFIE. This national survey is the first ever done of teacher's own definitions of what they value in professional growth and what they think would be most effective to improve their work. The survey is based on 848 phone interviews with teachers who are affiliated with the NEA, have at least three years of full-time teaching experience, and are currently teaching full time. The findings were supplemented with

an oversample of 228 NEA members who are appointed or elected leaders and who have had at least three years of full-time teaching at some point in their careers. Data from the survey tell us how and how often teachers engage individually and with their colleagues in professional growth activities, why teachers pursue study throughout their careers, issues of primary concern, and issues and topics teachers consider of greatest importance for them to study.

SURVEY METHODOLOGY

Greenberg Research designed and administered the telephone survey, which was conducted by professional interviewers on February 6 to 9, 1996.

Telephone numbers for these interviews were chosen at random from the list of all NEA members. The list was stratified by state, and each state was represented in the sample according to its contribution to total membership. The nationwide representative sample of 848 members was supplemented with an oversample of 228 NEA members who hold leadership positions. Respondents in this oversample were selected using a list of national, state, and local leaders. The data were weighted by region to ensure that the sample was an accurate reflection of the membership. The sample size with these weights applied was 800 members and 200 leaders, for a total of 1,000 cases.

In interpreting survey results, it should be remembered that all sample surveys are subject to possible sampling error; that is, the results of a survey may differ from those that would be obtained if the entire population were interviewed. The size of the sampling error depends on both the total number of respondents in the survey and the percentage distribution of responses to a particular question. For example, if a response to a given question that all respondents answered was 50 percent, we could be 95

percent confident that the true percentage would fall within plus or minus 3.1 percent of this percentage, or between 46.9 percent and 53.1 percent. *Source: Greenberg Research, Inc.*

PUBLIC FOCUS GROUPS

NFIE matched its research on teachers' concerns with an analysis of public attitudes concerning teachers' professional development. The New York-based Public Agenda Foundation conducted four focus groups of the general, non-teaching public at the behest of NFIE during the summer of 1995 in Albuquerque, New Mexico; Birmingham, Alabama; Denver, Colorado; and Fort Lee, New Jersey. Together with our teacher survey, these focus groups allowed analysts to identify areas of consensus between the public at large and the teaching profession. They also helped to gauge public sentiment relating to teachers' on-the-job learning within the context of other educational issues of concern.

APPENDIX B; OTHER ORGANIZATIONS

Chaired by Governor James B. Hunt Jr., of North Carolina and directed by Linda Darling-Hammond, the National Commission on Teaching and America's Future (NCTAF) is producing a major national report on teachers' learning and growth, from recruitment to undergraduate and graduate study, induction into the profession, licensure, continuing learning, and midcareer national certification. This commission, comprised of legislators, teachers, administrators and superintendents, teacher educators, union presidents, business leaders, and education researchers, is making major recommendations on the continuum of learning for teachers and the policies and structures that must be in place if every public school child is to have a qualified teacher. The commission's report is a comprehensive review of what is needed to fulfill such a goal. NFIE's report strongly endorses the NCTAF report and urges that its recommendations be carried out to create the basic policy reforms needed to recruit, educate, and sustain excellence in the profession.

The National Board for Professional Teaching Standards (NBPTS) is developing an important midcareer assessment of teaching performance. This rigorous program can take a year or more of preparation that allows a teacher's peers to review a rich array of the teacher's practice. Now being tested in pilot programs in selected fields, this national certification represents the teaching profession's highest standards. Individual professional development should be judged on a *continuum*, or developmental record, that includes college degrees earned, performance on entry assessments, licensure, and ultimately, the NBPTS's midcareer certification. Individual growth should go well beyond any minimal recertification requirements, should stretch the teacher's mind,

should allow the teacher to specialize in an area of personal interest and talent, and should be pursued with joy and passion. In brief, the work being done concurrently by other groups to improve teacher preparation includes the following:

- The National Council for Accreditation of Teacher Education (NCATE) works to instill rigorous standards for teacher preparation institutions, including new standards for technology use and standards for professional development schools for new teachers.
- The Interstate New Teachers Assessment and Support Consortium (INTASC) is a national effort to develop model state standards to judge whether new teachers are performing well enough to enter the teaching ranks.
- Teachers' specialized professional associations have been active in devising high standards for teaching and student learning in each of the major subject areas and in educational technology, led by the example of the mathematics standards prepared by the National Council of Teachers of Mathematics.
- The National Education Association and the American Federation of Teachers have been highly supportive of NCATE, INTASC, national certification, and other teacher education and licensure reforms.
- Professional development schools are being designed to integrate teacher preparation in colleges of education with schools to ensure that veteran teachers work closely and at length with new teachers to induct them into their professional lives. The faculties in these

professional development schools see the mentoring of new and prospective teachers as vital to their own continuing professional growth.

Other organizations are also working on ways to extend learning throughout teachers' careers:

- The Consortium for Policy Research in Education at Rutgers University and researchers at the University of Wisconsin at Madison are looking for ways to change incentives for learning so that they will continue throughout the career rather than just at the start and so that they will equitably acknowledge different roles and compensation for teachers with different levels of expertise and performance.
- The National Staff Development Council has issued standards for high-quality learning on the job.
- The National Governors' Association has issued strong calls for changes in state regulations to foster lifelong learning by teachers and to enrich that learning.
- The Department of Education has included the need for teachers' continuing development throughout the career in its Goals 2000 legislation and has issued guidelines for high-quality professional development for practicing teachers.

BIBLIOGRAPHY

- Abacus Associates. 1995. *A survey of Connecticut Education Association members on professional development*. Hatfield, MA: Abacus Associates.
- Albert, Louis S., and Franklin P. Wilbur. 1996. The partnership terrain. *AAHE Bulletin* 48, no. 7:9-11.
- American Federation of Teachers. 1995. *Principles for professional development: AFT's guidelines for creating professional development programs that make a difference*. Washington, DC: American Federation of Teachers.
- Anderson, Ronald D. 1995. Curriculum reform. *Phi Delta Kappan* 77, no. 1:33-36.
- Anderson, Ronald E., ed. 1993. *Computers in American schools, 1992: An overview: A national report from the international IEA computers in education study*. Minneapolis: University of Minnesota.
- Baker, Dean, and Todd Schafer. 1995. *The case for public investment*. Washington, DC: Economic Policy Institute.
- Ball, Deborah Loewenberg. 1996. Teacher learning and the mathematics reform: What we think we know and what we need to learn. *Phi Delta Kappan* 77, no. 7:500-58.
- Barkley, Robert Jr., and Beverly Johnson. 1993. *Professional staff development for systemic change*. Washington, DC: National Education Association, National Center for Innovation.
- Barry, Ed. 1994. Vermont students and public policy: Final project report. The National Foundation for the Improvement of Education. Washington, DC. Photocopy.
- Bellevue Public Schools. 1993. *Technology plan*. Bellevue, WA.
- Berger, Lance A., and Martin J. Sikora. 1994. *The change management handbook: A road map to corporate transformation*. Burr Ridge, IL: Irwin Professional Publishing.
- Bickel, William E., Rosemary A. Hattrup, and Cathy K. Pine. 1994. The National Humanities Center's Secondary School Faculty Development Project: Year two documentation report. National Humanities Center, Research Triangle Park, NC. Photocopy.
- Birk, Lisa. 1994. Intervention: A few teachers' unions take the lead in policing their own. *The Harvard Education Letter* 10, no. 6:1-4.
- Bluestone, Barry, and Irving Bluestone. 1992. *Negotiating the future: A labor perspective on American business*. New York: Basic Books.
- Boulder Valley School District. n.d. The extended year project: Creating an exemplary educational community. Boulder, CO. Photocopy.
- . 1994. Teaching K-12 teachers to use the Internet: What works. By Libby Black. Boulder, CO. Photocopy.
- . 1995. Proposal for a K-16 humanities center at the University of Colorado at Boulder. Boulder, CO. Photocopy.
- Boyer, Ernest L. 1990. *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.
- . 1995. *The basic school: A community for learning*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.
- Bradley, Ann. 1996a. The long haul. In *Inquiring minds: Creating a nation of teachers as learners*. Special pullout report. *Education Week*, 17 April.
- . 1996b. The missing link. In *Inquiring minds: Creating a nation of teachers as learners*. Special pullout report. *Education Week*, 17 April.
- Brewer, Dominic J., and Randy Ross. 1995. Promoting effective teacher professional development through salary incentives: Exploring the policy options. Paper prepared for the National Education Association State Education Finance Workshop, Denver.
- Bull, Barry, Mark Buechler, Steve Didley, and Lee Krehbiel. 1994. *Professional development and teacher time: Principles, guidelines, and policy options for Indiana*. Bloomington: Indiana University, Indiana Education Policy Center.
- Burns, Rebecca C. 1994. *Interdisciplinary teamed instruction: Development and pilot test*. Charleston, WV: Appalachia Educational Laboratory.
- The Business Roundtable. 1992. *The essential components of a successful education system: Putting policy into practice*. Washington, DC: The Business Roundtable.
- Butler, Jocelyn A. 1992. *Staff development*. School Improvement Research Series, no. 12. Portland, OR: Northwest Regional Educational Laboratory.
- California Teachers Association. 1995. *Contract reference manual*. Sante Fe Springs: California Teachers Association.
- Carlson, Elizabeth A. 1990a. An evaluation of the impact of the Christa McAuliffe Institute on the 1989 CMI Educators and Fellows, from their perspectives: A report for The National Foundation for the Improvement of Education. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- . 1990b. The 1990 Christa McAuliffe Institute conference: Observations and analysis. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Carnegie Forum on Education and the Economy. Task Force on Teaching as a Profession. 1986. *A nation prepared: Teachers for the 21st century*. Washington, DC: Carnegie Forum on Education and the Economy.
- Christa McAuliffe Institute Task Force. 1992. The Christa McAuliffe Institute for Educational Pioneering: A report and strategic plan for a program beginning September 1993. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Chubb, John E., and Terry M. Moe. 1990. *Politics, markets, and America's schools*. Washington, DC: The Brookings Institution.
- Cincinnati Federation of Teachers. 1994. *The career in teaching program*. Cincinnati: Cincinnati Federation of Teachers.

- Cincinnati Public Schools. 1994. *Collective bargaining agreement effective June 27, 1994*. Cincinnati.
- Clark, Caroline, Pamela A. Moss, Susan Goering, Robert J. Herter, Bertha Lamar, Doug Leonard, Sarah Robbins, Margaret Russell, Mark Templin, and Kathy Wascha. 1996. Collaboration as dialogue: Teachers and researchers engaged in conversation and professional development. *American Educational Research Journal* 33, no. 1:193-231.
- Clune, William H. 1996. Educational finance in the 21st century: Productive education through adequacy and efficiency. *State Education Finance Communications* (March): 2-11.
- Cochran-Smith, Marilyn, and Susan L. Lytle. 1992. Communities for teacher research: Fringe or forefront? *American Journal of Education* 100, no. 3:298-324.
- Cohen, David K. 1995. What is the system in systemic reform? *Educational Researcher* 24, no. 9:11-17, 31.
- Columbus Board of Education. [1992]. *Agreement between the Columbus Board of Education and the Columbus Education Association*. Columbus, OH.
- Columbus Education Association. n.d. *Columbus Education Association membership handbook*. Columbus, OH: Columbus Education Association.
- Columbus Education Association, Columbus Public Schools, The Ohio State University, and Otterbein College. [1995?]. *Professional development teacher appraisal process: Pilot project, 1995-96*. Columbus, OH: Columbus Public Schools.
- Columbus Public Schools, Columbus Education Association, and The Ohio State University. 1996. *The Urban Academy for Professional Development and School Renewal*. Columbus, OH: Columbus Public Schools, Columbus Education Association, and The Ohio State University.
- Community Consolidated School District Number 146. 1994a. *Contract between the Board of Education, Community Consolidated District Number 146, Tinley Park, Illinois and Tinley Council of Local 6834, Illinois Federation of Teachers, American Federation of Teachers, 1994-97*. Tinley Park.
- . 1994b. *Technology staff development model*. Tinley Park, IL.
- Community Unit School District 200. 1994. *Agreement: Board of Education and Wheaton-Warrenville Education Association, 1994-1997*. Wheaton, IL.
- Conant, James B. 1963. *The education of American teachers*. New York: McGraw-Hill.
- Conley, Sharon, and Allan Odden. 1995. Linking teacher compensation to teacher career development. *Educational Evaluation and Policy Analysis* 17, no. 2:219-37.
- Corcoran, Thomas B. 1995a. *Helping teachers teach well: Transforming professional development*. CPRE Policy Briefs, no. RB-16-June 1995. New Brunswick, NJ: Rutgers University, Consortium for Policy Research in Education.
- . 1995b. *Transforming professional development for teachers: A guide for state policymakers*. Washington, DC: National Governors' Association.
- Corcoran, Thomas B., and Margaret Goertz. 1995. Instructional capacity and high performance schools. *Educational Researcher* 24, no. 9:27-31.
- Dade County Public Schools. [1993?]. *Evaluation of Project RAISE: A project for the Miami Central Senior High School feeder pattern*. Miami.
- . 1994. *Dade Academy for the Teaching Arts: Extern project index*. Miami.
- Dade County Public Schools, Bureau of Human Resources Development. 1993. *Dade Academy for the Teaching Arts handbook*. Miami.
- . 1994. *Master plan for in-service education, 1994-1999*. Miami.
- Darling-Hammond, Linda. 1990. Teaching and knowledge: Policy issues posed by alternate certification for teachers. *Peabody Journal of Education* 67, no. 3:123-54.
- . 1993. Reframing the school reform agenda: Developing capacity for school transformation. *Phi Delta Kappan* 74, no. 10:753-61.
- . 1994a. The current status of teaching and teacher development in the United States. National Commission on Teaching and America's Future. New York: Photocopy.
- . 1994b. National standards and assessments: Will they improve education? *American Journal of Education* 102, no. 4:478-510.
- . 1995. The role of teacher expertise and experience in students' opportunity to learn. In *Strategies for linking school finance and students' opportunity to learn*, edited by Patricia Brown. Washington, DC: National Governors' Association.
- . 1996. The quiet revolution: Rethinking teacher development. *Educational Leadership* 53, no. 6:4-10.
- Darling-Hammond, Linda, and A. Lin Goodwin. 1993. Progress toward professionalism in teaching. In *Challenges and achievement of American education: 1993 yearbook of the Association for Supervision and Curriculum Development*, edited by Gordon Cawelti. Alexandria, VA: Association for Supervision and Curriculum Development.
- Darling-Hammond, Linda, Ann Lieberman, Milbrey McLaughlin, and Lynne Miller. 1992. *Professional development and restructuring*. New York: Columbia University, Teachers College, National Center for Restructuring Education, Schools, and Teaching.
- Darling-Hammond, Linda, and Milbrey W. McLaughlin. 1995. Policies that support professional development in an era of reform. *Phi Delta Kappan* 76, no. 8:597-604.
- Darling-Hammond, Linda, and Arthur E. Wise. 1992. Teacher professionalism. In *Encyclopedia of educational research*, 6th ed. Edited by Marvin C. Alkin. New York: Macmillan.
- David, Jane L. 1994. *Transforming state education agencies to support education reform*. Washington, DC: National Governors' Association.
- Davis, C. R. 1964. Selected teaching-learning factors contributing to achievement in chemistry and physics. Ph.D. diss., University of North Carolina, Chapel Hill.
- D'Emidio-Caston, Marianne, Lynette Hill, and Jon Snyder. 1994. *Teachers' voices: Reinventing themselves, their profession, and their communities*. New York: Columbia University, Teachers College, National Center for Restructuring Education, Schools, and Teaching.

- Dilworth, Mary E., and David G. Imig. 1995. Professional teacher development. *The ERIC Review* 3, no. 3:5-11.
- Donahue, Bruce. 1994. Vermont students and public policy. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Drucker, Peter F. 1993. *Post-capitalist society*. New York: HarperBusiness.
- Druva, C. A., and R. D. Anderson. 1983. Science teacher characteristics by teacher behavior and by student outcome: A meta-analysis of research. *Journal of Research in Science Teaching* 20, no. 5:467-79.
- DuFour, Richard P. 1991. *The principal as staff developer*. Edited by Dennis Sparks. Bloomington, IN: National Educational Service.
- Dugger, William E. Jr. 1996. The development of standards. *Technology for All Americans* (April): 1.
- Earl, Lorna, Peter Lipman, and Marie Vincent. 1992. *Pulling it all together: A framework for system coherence*. Scarborough, Ontario: Scarborough Board of Education.
- Einbender, Lynne, and Diane Wood. 1995. *An authentic journey: Teachers' emergent understandings about authentic assessment and practice*. New York: Columbia University, Teachers College, National Center for Restructuring Education, Schools, and Teaching.
- Elmore, Richard F. 1995. Structural reform and educational practice. *Educational Researcher* 24, no. 9:23-26.
- . 1996. Getting to scale with good educational practice. *Harvard Educational Review* 66, no. 1:1-26.
- Elmore, Richard F., and Susan H. Fuhrman. 1995. Opportunity to learn standards and the state role in education. *Teachers College Record* 96, no. 3:432-57.
- El Paso Independent School District. [1994]. *Staff development profile*. El Paso, TX.
- Engelke, Lynn-Steven. 1995. *Teaching and learning with museums: A summer institute for museum and classroom educators: Final report*. Washington, DC: Smithsonian Institution.
- Fairfax County Public Schools. 1995. *Teacher performance evaluation handbook: A resource for all teacher-scale employees*. Springfield, VA.
- Farkas, Steve, and Jean Johnson. 1996. *Given the circumstances: Teachers talk about public education today*. New York: Public Agenda.
- Firestone, William A. 1994. Redesigning teacher salary systems for educational reform. *American Educational Research Journal* 31, no. 3:549-74.
- Fitzsimmons, Stephen J., and Larry C. Kerpelman, eds. 1994. *Teacher enhancement for elementary and secondary science and mathematics: Status, issues, and problems*. Washington, DC: National Science Foundation.
- Fletcher, J. D. 1989. The effectiveness and cost of interactive videodisc instruction. *Machine-Mediated Learning* 3, no. 4:361-85.
- Floden, Robert E., Margaret E. Goertz, and Jennifer O'Day. 1995. Capacity building in systemic reform. *Phi Delta Kappan* 77, no. 1:19-21.
- Florida Commission on Education Reform and Accountability. 1994. *Blueprint 2000: A system of school improvement and accountability: 1995-96 school improvement plans*. Tallahassee.
- Friedman, Lawrence B., and Merrill Chandler. 1995. *New Iowa schools: Process and outcomes, 1994-95*. Oak Brook, IL: North Central Regional Educational Laboratory.
- Fuhrman, Susan H. 1995. Introduction: Recent research on education reform. *Educational Researcher* 24, no. 9:4-5.
- Fuhrman, Susan H., and Richard F. Elmore. 1995. Ruling out rules: The evolution of deregulation in state education policy. *Teachers College Record* 97, no. 2:279-309.
- Fullan, Michael G. 1996. Turning systemic thinking on its head. *Phi Delta Kappan* 77, no. 6:420-23.
- Futrell, Mary Harwood, Dennis H. Holmes, J. Lisa Christie, and Eleanor J. Cushman. 1995. *Linking education reform and teachers' professional development: The efforts of nine school districts*. Washington, DC: The George Washington University, Graduate School of Education and Human Development, Center for Policy Studies, Institute for Curriculum, Standards, and Technology.
- Garrison, George R., Armita A. Jones, Robert Pollack, and Edward W. Said. 1995. *Beyond the academy: A scholar's obligations*. ACLS Occasional Paper, no. 31. New York: American Council of Learned Societies.
- Geiger, Keith, and Frank Newman. [1995]. Three transformations for 21st century public schools: To restructure our schools, we must first restructure the management-union relationship. National Education Association, Washington, DC. Photocopy.
- Gold, Lawrence N. 1991. *States and communities on the move: Policy initiatives to create a world-class workforce*. Washington, DC: William T. Grant Foundation Commission on Work, Family, and Citizenship.
- Goodlad, John I. 1990. *Teachers for our nation's schools*. San Francisco: Jossey-Bass.
- Goren, Paul. 1995. *Labor-management relations and professional development: Establishing the critical nexus*. Issue Brief. Washington, DC: National Governors' Association.
- Gray, James, and Richard Sterling. 1995. The National Writing Project: A university-based teacher-centered partnership program. *On Common Ground*, no. 5:22-24.
- Greenberg, Nancy, Ronald D. Henderson, Jeffrey M. Schneider, Oscar Uribe Jr., and Richard R. Verdugo. 1994. Public school quality: A "front line" perspective. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Greenberg Research, Inc. 1996a. Keeping up with change: A survey on professional growth conducted for The National Foundation for the Improvement of Education. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- . 1996b. The National Foundation for the Improvement of Education member/leader survey banners, February 6-10, 1996. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- . [1996c]. The National Foundation for the Improvement of Education professional growth member survey verbatims: 1. professional growth 2. most profound professional growth experience. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Grimmett, Peter P., and Jonathan Neufeld, eds. 1994. *Teacher development and the struggle for authenticity: Professional growth and restructuring in the context of change*. New York: Teachers College Press.
- Grossman, Pamela, and Susan S. Stodolsky. 1995. Content as context: The role of school subjects in secondary school teaching. *Educational Researcher* 24, no. 8:5-11, 23.

- Hargreaves, Andy. 1994. *Changing teachers, changing times: Teachers' work and culture in the postmodern age*. New York: Teachers College Press.
- Haycock, Kati. 1996. Thinking differently about school reform: College and university leadership for the big changes we need. *Change* 28, no. 1:13-18.
- Haynes, David D. 1995. One teacher's experience with national board assessment. *Educational Leadership* 52, no. 6:58-60.
- Heinzman, Barbara. 1996. Letter to The National Foundation for the Improvement of Education, 19 January.
- Hicklin, Billie N. 1995. E-mail to The National Foundation for the Improvement of Education, 26 November.
- Higgenbotham, Marla, ed. 1995. *What governors need to know about education reform*. Washington, DC: National Governors' Association.
- Hixson, Judson, and Beau Fly Jones. 1990. Using technology to support professional development for teachers and administrators: Implications for state-level policy and planning. Paper commissioned for the Chief State School Officers' State Technology Conference, 29 April-2 May, Minneapolis.
- The Holmes Group. 1995. *Tomorrow's schools of education*. East Lansing, MI: The Holmes Group.
- The Holmes Group Curriculum Committee. 1991. *Toward a community of learning: The preparation and continuing education of teachers*. East Lansing, MI: The Holmes Group.
- Holzman, Michael. 1995. Sponsoring "organic intellectuals": A way to connect teachers to the sources of new knowledge. *Education Week*, 25 January.
- Holzman, Michael, and Kenneth J. Tewel. 1992. The San Diego Panasonic partnership: A case study in restructuring. *Teachers College Record* 93, no. 3:489-99.
- Houghton, Mary, and Paul Goren. 1995. *Professional development for educators: New state priorities and models*. Washington, DC: National Governors' Association.
- Inos, Rita Hocog, and Mary Anne Quigley. 1995. *Synthesis of the research on educational change*. Part 4, *The teacher's role*. Honolulu: Pacific Region Educational Laboratory.
- InSites. 1995. *What happened? What next? American Council of Learned Societies' Elementary and Secondary Teacher Curriculum Development Project final evaluation report*. Ft. Collins, CO: InSites.
- International Business Machines Corporation. 1995. *Technology for adult education and job training*. Atlanta: International Business Machines Corporation.
- Javers, Ron. 1994. *A change of mind: CHART: A ten year experiment in school reform*. New York: Rockefeller Foundation.
- Jervis, Kathe, and Nancy Wilson. 1995. *Collaboration: Looking beneath the surface*. New York: Columbia University, Teachers College, National Center for Restructuring Education, Schools, and Teaching.
- Johnson, Jean. 1995. *Assignment incomplete: The unfinished business of education reform*. New York: Public Agenda.
- Johnson, Jean, and John Immerwahr. 1994. *First things first: What Americans expect from the public schools*. New York: Public Agenda.
- Joyce, Bruce, and Emily Calhoun. 1995. School renewal: An inquiry, not a formula. *Educational Leadership* 52, no. 7:51-55.
- Joyce, Bruce, and Beverly Showers. 1995. *Student achievement through staff development: Fundamentals of school renewal*. 2d ed. White Plains, NY: Longman.
- Katz, Lilian G., and James Rath. 1992. Six dilemmas in teacher education. *Journal of Teacher Education* 43, no. 5:376-85.
- Keene, Ellin. 1995. Lessons of permanence: PEC insights about professional development ten years into the game. *Public Education Coalition News* 8, no. 1:1,4.
- Kerchner, Charles Taylor, and Julia E. Koppich. 1993. *A union of professionals: Labor relations and educational reform*. New York: Teachers College Press.
- Kerchner, Charles Taylor, Julia E. Koppich, and Joseph G. Weeres. 1995. *United mind workers: Representing teaching in the knowledge society*. Typescript.
- Kerrins, Judith A. 1995. A teacher-centered induction experience. *Journal of Staff Development* 16, no. 1:26-30.
- King, Sherry, Chris Louth, and Patricia Wasley. 1993. *Roses, retrievers, and research: Collaborative inquiry to foster better schools*. Paper presented at the annual meeting of the American Educational Research Association, Atlanta.
- Kirst, Michael W. 1995. Recent research on intergovernmental relations in educational policy. *Educational Researcher* 24, no. 9:18-22.
- Lampert, Magdalena, and Angie S. Eshelman. 1995. Using technology to support effective and responsible teacher education: The case of interactive multimedia in mathematics methods courses. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Lee, Valerie E., Julia B. Smith, and Robert G. Croninger. 1995. Another look at high school restructuring. *Issues in Restructuring Schools*, no. 9:1-10.
- LeMahieu, Paul G. 1996. From authentic assessment to authentic accountability. In *Standards-based reform: A roadmap for change*. Denver: Education Commission of the States.
- LeMahieu, Paul G., and Bonnie A. Lesley. 1994. State education agencies: Partners in reform. Paper prepared for the National Governors' Association, National Governors' Association, Washington, DC. Photocopy.
- LeMahieu, Paul G., and Richard Sterling. 1991. *CHARTing educational reform: An interim report of evaluations of the Collaboratives for Humanities and Arts Teaching*. 2 vols. Philadelphia: Collaboratives for Humanities and Arts Teaching.
- Levine, Marsha, and Arthur Wise. 1995. Professional development school standards. *PDS Network News* 2, no. 3:1-3, 7.
- Lewis, Anne C. 1995. *Believing in ourselves: Progress and struggle in urban middle school reform 1989-1995*. New York: The Edna McConnell Clark Foundation.
- Lewis, Susan. 1994. Vermont students and public policy. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Lieberman, Ann. 1995. Practices that support teacher development: Transforming conceptions of professional learning. *Phi Delta Kappan* 76, no. 8:591-96.

- . ed. 1988. *Building a professional culture in schools*. New York: Teachers College Press.
- Lieberman, Ann, and Lynne Miller, eds. 1991. *Staff development for education in the '90s: New demands, new realities, new perspectives*. 2d ed. Professional Development and Practice Series. New York: Teachers College Press.
- Lief, Beth. 1992. A New York City case study: The private sector and the reform of public education. *Teachers College Record* 93, no. 3:523–35.
- Lincoln Center Institute for the Arts in Education. 1995. *Lincoln Center Institute project for evaluation and curriculum development: Progress report 2*. New York: Lincoln Center Institute for the Arts in Education.
- Lindsay, Drew. 1996. Money talks. In *Inquiring minds: Creating a nation of teachers as learners*. Special pullout report. *Education Week*, 17 April.
- Lipman, Peter. 1992. *Review of school-based staff development pilot project*. Scarborough, Ontario: Scarborough Board of Education.
- Little, Judith Warren. 1992. Teacher development and educational policy. In *Teacher development and educational change*, edited by Michael Fullan and Andy Hargreaves. London: The Falmer Press.
- . 1993. Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis* 15, no. 2:129–51.
- Louis Harris and Associates. 1995. *The Metropolitan Life survey of the American teacher, 1984–1995: Old problems, new challenges*. New York: Metropolitan Life Insurance Company.
- Maeroff, Gene I. [1990]. *Voices from the classroom: Exceptional teachers speak*. Washington, DC: The National Foundation for the Improvement of Education.
- Mann, Dale. 1995. Can teachers be trusted to improve teaching? *Phi Delta Kappan* 77, no. 1:86–88.
- Massachusetts Department of Education. 1995. *State plan for professional development, 1995–1996*. Malden.
- Massell, Diane, and Susan Fuhrman. 1994. *Ten years of state education reform, 1983–1993: Overview with four case studies*. CPRE Research Report Series, no. RR-028. New Brunswick, NJ: Rutgers University, Consortium for Policy Research in Education.
- Maszak, Robert. [1995]. Letter to The National Foundation for the Improvement of Education.
- Matosian, Marilyn. 1995. Letter to The National Foundation for the Improvement of Education, 24 November.
- McDiarmid, G. Williamson. 1995. *Realizing new learning for all students: A framework for the professional development of Kentucky teachers*. East Lansing, MI: Michigan State University, National Center for Research on Teacher Learning.
- Means, Barbara, Kerry Olson, and Ram Singh. 1995. Beyond the classroom: Restructuring schools with technology. *Phi Delta Kappan* 77, no. 1:69–72.
- Mehlinger, Howard D. 1996. School reform in the information age. *Phi Delta Kappan* 77, no. 6:400–407.
- Meier, Deborah. 1995. *The power of their ideas: Lessons for America from a small school in Harlem*. Boston: Beacon Press.
- Mergendoller, John R., Jerome Johnston, Saul Rockman, and Jerry Willis. 1994. *Exemplary approaches to training teachers to use technology*. Vol. 1. *Case studies*. Washington, DC: Office of Technology Assessment; Novato, CA: Beryl Buck Institute for Education.
- Meyers, Ellen. 1995. *Changing schools, changing roles—redefining the role of the principal in a restructured school: A report from IMPACT II—The Teachers Network*. New York: IMPACT II—The Teachers Network.
- Miller, Barbara, Brian Lord, and Judith Dorney. 1994. *Staff development for teachers: A study of configurations and costs in four districts*. Newton, MA: Education Development Center.
- Mohrman, Allan M. Jr., Susan Albers Mohrman, and Allan R. Odden. 1996. Aligning teacher compensation with systemic school reform: Skill-based pay and group-based performance rewards. *Educational Evaluation and Policy Analysis* 18, no. 1:51–71.
- Moore, Charlene, and Lorna Earl. 1992. *Elementary CRDI needs assessment: Focused interviews with school-based curriculum management teams*. Scarborough, Ontario: Scarborough Board of Education.
- National Association of Secondary School Principals. 1996. *Breaking ranks: Changing an American institution*. Reston, VA: National Association of Secondary School Principals.
- National Board for Professional Teaching Standards. 1994a. *How we plan to achieve our vision*. Detroit: National Board for Professional Teaching Standards.
- . 1994b. *What teachers should know and be able to do*. Detroit: National Board for Professional Teaching Standards.
- . 1994c. *Why America needs the National Board for Professional Teaching Standards*. Detroit: National Board for Professional Teaching Standards.
- . 1995a. Developing activity in states supporting national board certification. National Board for Professional Teaching Standards, Detroit. Photocopy.
- . 1995b. Local action supporting national board certification. National Board for Professional Teaching Standards, Detroit. Photocopy.
- . 1995c. State action supporting national board certification. National Board for Professional Teaching Standards, Detroit. Photocopy.
- National Center on Education and the Economy. 1992. *A human resources development plan for the United States*. Rochester, NY: National Center on Education and the Economy.
- National Coalition of Educational Equity Advocates. 1994. *Educate America: A call for equity in school reform*. Chevy Chase, MD: Mid-Atlantic Equity Consortium.
- National Commission on Excellence in Education. 1983. *A nation at risk: The imperative for educational reform*. Washington, DC: GPO.
- National Council for Accreditation of Teacher Education. n.d. *The new professional teacher project: Teacher preparation: A continuum*. Washington, DC: National Council for Accreditation of Teacher Education.
- National Education Association (NEA). 1991. *Collaborative bargaining: A critical appraisal*. Studies in Collective Bargaining. Washington, DC: National Education Association.
- . 1992. *Status of the American public school teacher, 1991–1991*. Washington, DC: National Education Association.

BEST COPY AVAILABLE

- . 1993a. *Advancing the national education goals: The role of collective bargaining*. Studies in Collective Bargaining. Washington, DC: National Education Association.
- . [1993b?]. *NEA of the future (new unionism)*. Washington, DC: National Education Association.
- . 1993c. *Professional development for vocational educators: Report of the 1989-91 NEA Special Committee on Occupational/Vocational Education*. Washington, DC: National Education Association.
- . 1993d. *Quality control in teaching*. Fast Facts. Washington, DC: National Education Association.
- . 1994a. *It's about time!!* Washington, DC: National Education Association. National Center for Innovation.
- . 1994b. *Paraprofessional: Training and development*. Fast Facts. Washington, DC: National Education Association.
- . 1994c. *Teacher portfolios—an emerging trend?* Fast Facts. Washington, DC: National Education Association.
- . 1994d. *Time strategies*. Teacher-to-Teacher Series. Washington, DC: National Education Association.
- . [1995]. *State indicators of school excellence*. Washington, DC: National Education Association.
- National Education Commission on Time and Learning. 1994. *Prisoners of time*. Washington, DC: GPO.
- National Education Goals Panel. 1995. *The national education goals report: Building a nation of learners*. 4 vols. Washington, DC: GPO.
- The National Foundation for the Improvement of Education (NFIE). 1987a. *Community mobilization for dropout prevention: A Blueprint for Success*, no. 2. Washington, DC: The National Foundation for the Improvement of Education.
- . [1987b]. *Images of potential*. Washington, DC: The National Foundation for the Improvement of Education.
- . 1987c. *Operation rescue*. Revised ed. A Blueprint for Success, no. 1. Washington, DC: The National Foundation for the Improvement of Education.
- . [1988]. *The emerging roles of teachers: A paper of the Christa McAuliffe Institute for Educational Pioneering*. Washington, DC: The National Foundation for the Improvement of Education.
- . [1989a]. *Curriculum, technology, diversity: A paper of the Christa McAuliffe Institute for Educational Pioneering*. Washington, DC: The National Foundation for the Improvement of Education.
- . [1989b]. *Images in action*. Washington, DC: The National Foundation for the Improvement of Education.
- . 1990a. *Lessons learned: NFIE's dropout prevention initiative*. A Blueprint for Success, no. 3. Washington, DC: The National Foundation for the Improvement of Education.
- . [1990b]. *A new culture of learning: A paper of the Christa McAuliffe Institute for Educational Pioneering*. Washington, DC: The National Foundation for the Improvement of Education.
- . 1992. *Teacher leadership training: A study of the impact of the Christa McAuliffe Institute*. The National Foundation for the Improvement of Education. Washington, DC. Photocopy.
- . [1993]. *Changing teaching: The next frontier*. Washington, DC: The National Foundation for the Improvement of Education.
- . 1995a. *Touching the Future*. Washington, DC: The National Foundation for the Improvement of Education.
- . 1995b. *Using minds well: Dropout Prevention Program of The National Foundation for the Improvement of Education*. Washington, DC: The National Foundation for the Improvement of Education.
- National Staff Development Council (NSDC). 1994. *National Staff Development Council's standards for staff development: Middle level edition*. Oxford, OH: National Staff Development Council.
- . 1996. NSDC adopts resolutions on time/resources, alternative staff development approaches, and integrating staff development within strategic and school improvement planning. *Council Update* (Spring): 1.
- National Staff Development Council and National Association of Elementary School Principals. 1995. *Standards for staff development: Elementary school edition*. Oxford, OH: National Staff Development Council; Alexandria, VA: National Association of Elementary School Principals.
- National Staff Development Council and National Association of Secondary School Principals. 1995. *Standards for staff development: High school edition*. Oxford, OH: National Staff Development Council; Reston, VA: National Association of Secondary School Principals.
- National Writing Project. [1995]. *Bay Area Writing Project, California Writing Project, National Writing Project: Model and program design*. Berkeley, CA: National Writing Project.
- New Albany-Floyd County Consolidated School Corporation. 1992. *Master contract between the Board of School Trustees of the New Albany-Floyd County Consolidated School Corporation and the New Albany-Floyd County Education Association*. New Albany, IN.
- New Iowa Schools Development Corporation. 1995. *Programs for leadership, school-community planning, and school-based development*. West Des Moines: New Iowa Schools Development Corporation.
- Newmann, Fred M., and Gary G. Wehlage. 1995. *Successful school restructuring: A report to the public and educators by the Center on Organization and Restructuring of Schools*. Madison: University of Wisconsin, School of Education, Center on Organization and Restructuring of Schools.
- Newton, Anne, comp. 1994. *Snapshots of professional development and recertification/relicensure systems in selected states*. Andover, MA: The Regional Laboratory for Educational Improvement of the Northeast and Islands.
- Noble, Audrey J., Sandra Deemer, and Betsy Davis. 1996. *School-based management*. Policy Brief, no. PB-001.1. Newark, DE: University of Delaware, Delaware Education Research and Development Center.
- Nolan, Jim. 1993. Engaging teachers in self-directed, collegial inquiry as an alternative to traditional teacher supervision and evaluation. Paper presented at the annual meeting of the American Educational Research Association, Atlanta.
- North Central Regional Educational Laboratory. 1994. *Professional development: Changing times*. Policy Briefs, report 4. Oak Brook, IL: North Central Regional Educational Laboratory.
- Odden, Allan. 1991. *School finance in the 1990's*. Policy Brief, no. 1. Los Angeles: University of Southern California, Center for Research in Education Finance.
- . ed. 1992. *Rethinking school finance: An agenda for the 1990's*. San Francisco: Jossey-Bass.
- Odden, Allan, and William Clune. 1995. Improving educational productivity and school finance. *Educational Researcher* 24, no. 9:6-10, 22.

- Odden, Allan, David Monk, Yasser Nakib, and Lawrence Picus. 1995. The story of the education dollar: No academy awards and no fiscal smoking guns. *Phi Delta Kappan* 77, no. 2:161-68.
- O'Donnell, Susannah Cassedy. 1995. The New York City Museum School: A learning process. *Museum News* 74, no. 3:38-41, 64, 66, 68.
- Ohio Department of Education. 1995. *Venture capital in Ohio schools: Building commitment and capacity for school renewal*. Columbus.
- The Ohio State University, Columbus Public Schools, and Columbus Education Association. 1995. Partnership for technology in education. Columbus Education Association, Columbus, OH. Photocopy.
- Overland, Betty. 1995. E-mail to The National Foundation for the Improvement of Education, 28 November.
- Pallatto-Fontaine, Debra. 1996. A learning community in action: The Flagg Street School-Assumption College professional development school collaborative. *PDS Network News* 3, no. 1:1-3, 7.
- Panasonic Foundation. [1996]. *We're about...*. Secaucus, NJ: Panasonic Foundation.
- Penn and Schoen Associates. 1993. Report to National Council for Accreditation of Teacher Education regarding national public attitudes toward teacher accreditation. Penn and Schoen Associates, Washington, DC. Photocopy.
- Peterson, Penelope L., and Carol Barnes. 1996. Learning together: The challenge of mathematics, equity, and leadership. *Phi Delta Kappan* 77, no. 7:485-91.
- Pinellas County Schools. 1995. *Superintendent's quality challenge: Criteria book, 1995*. Largo, FL.
- Pipho, Chris. 1996. Removing obstacles from the path of reform. *Phi Delta Kappan* 77, no. 7:462-63.
- Ponessa, Jeanne. 1996. Union dues. In *Inquiring minds: Creating a nation of teachers as learners*. Special pullout report. *Education Week*, 17 April.
- Prawat, Richard S. 1992. Teachers' beliefs about teaching and learning: A constructivist perspective. *American Journal of Education* 100, no. 3:354-95.
- Public Agenda. 1995. *Public attitudes toward teachers' professional development: A focus group report by Public Agenda*. New York: Public Agenda.
- Quality Education Data. 1994. *Educational technology trends, 1993-94*. Denver: Quality Education Data.
- Recruiting New Teachers and National Conference of State Legislatures. 1993. *State policies to improve the teacher workforce: Shaping the profession that shapes America's future*. Belmont, MA: Recruiting New Teachers.
- Rényi, Judith. 1993. *Going public: Schooling for a diverse democracy*. New York: The New Press.
- . 1994a. Investing in the public education workforce. The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- . 1994b. Provoked to attentiveness: Towards an arts-based, integrative high school curriculum: A report for the Getty Center for Education in the Arts and The College Board. The College Board, New York. Photocopy.
- Resta, Paul, and Adrienne Kennedy. 1995. *ACT Academy evaluation: Final report*. Austin: University of Texas.
- Revenaugh, Mickey. 1995. Teacher training. *America's Agenda* 5, no. 3:26-28.
- Richardson, Joanna. 1996. Teacher to teacher. In *Inquiring minds: Creating a nation of teachers as learners*. Special pullout report. *Education Week*, 17 April.
- Rigden, Diana Wyllie, and Maivie McAdoo. [1995?]. *Supporting the national education goals: A guide for business leaders*. New York: Council for Aid to Education.
- Rigney, Susan L. 1995. What good is Vermont's portfolio assessment? *Basic Education* 40, no. 4:9-11.
- Rockman Et Al. 1995a. *Facilitating change: NFIE's Learning Tomorrow project and school reform*. San Francisco: Rockman Et Al.
- . 1995b. *NFIE's Learning Tomorrow program and school reform: The northeast projects*. San Francisco: Rockman Et Al.
- Romer, Roy. 1994. Governor of Colorado. *Capacity for change: Models for professional development: A Colorado report: Implementing professional development for standards-driven education*. Denver.
- Roop, Laura J., and Laura Schiller. 1995. Teachers and students collaborating as "makers." *On Common Ground*, no. 5:24-25.
- Rosenholtz, Susan J. 1991. *Teachers' workplace: The social organization of schools*. White Plains, NY: Longman, 1989. Reprint, New York: Teachers College Press.
- Rowan, Brian. 1994. Comparing teachers' work with work in other occupations: Notes on the professional status of teaching. *Educational Researcher* 23, no. 6:4-17, 21.
- San Diego City Schools. Planning, Research, and Evaluation Division. 1990. *Restructuring: An inside look: The evolution of the O'Farrell Community School: Center for Advanced Academic Studies*. San Diego.
- Sarason, Seymour B. 1995. Some reactions to what we have learned. *Phi Delta Kappan* 77, no. 1:84-85.
- Savas, Ann. 1996. To grow a teacher. *Basic Education* 40, no. 8:7-9.
- Scarborough Board of Education. Program Department. 1993. *School-based staff development: Questions and answers*. Scarborough, Ontario: Scarborough Board of Education.
- Schneider, Jeff. 1996. KEYS to excellence for your schools. In *Linking education finance and performance: Selected proceedings: State education finance workshop, Denver, Colorado, May 18-19, 1995*, edited by National Education Association, Research Division. Washington, DC: National Education Association.
- Schneider, Jeffrey M., Richard R. Verdugo, Oscar Uribe Jr., and Nancy M. Greenberg. 1993. Statistical quality control and school quality. *Contemporary Education* 64, no. 2:84-87.
- Schoenberg, Robert E. 1993. Humanities programs of the University of Virginia Center for the Liberal Arts supported by the National Endowment for the Humanities: A review of activities and suggestions for future directions. University of Virginia, Center for the Liberal Arts, Charlottesville. Photocopy.
- School District of the City of Allentown. 1993. *Agreement: Allentown Education Association, School District of the City of Allentown*. Allentown, PA.
- Seattle Public Schools. [1993?]. *Staff Training Assistance and Review Program*. Seattle.

- Sheingold, Karen, and Marc Tucker, eds. 1990. *Restructuring for learning with technology*. New York: Center for Technology in Education and National Center on Education and the Economy.
- Sherman-Day, Marti, Steve Kingery, George Lawson, and Madelyn Migvanko. 1992. A grassroots collaborative approach to professional development: The South Central Ohio Regional Training Center. Paper presented at the National Council of States for Inservice Education Conference, San Diego.
- Shostak, Arthur B. 1991. *Robust unionism: Innovations in the labor movement*. Ithaca, NY: ILR Press.
- Sivin-Kachala, Jay, and Ellen R. Bialo. [1995]. *Report on the effectiveness of technology in schools, '95-'96*. Washington, DC: Software Publishers Association.
- Sparks, Dennis. 1995. A paradigm shift in staff development. *The ERIC Review* 3, no. 3:2-4.
- Sparks, Dennis, and Susan Loucks-Horsley. 1989. Five models of staff development for teachers. *Journal of Staff Development* 10, no. 4:40-57.
- Stevenson, Harold W., and James W. Stigler. 1992. *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education*. New York: Summit Books.
- Stucker, Jan Collins. 1995. Alternate routes. *America's Agenda* 5, no. 3:14-17.
- Sutton, James H. 1993. Undermining a profession. *Phi Delta Kappan* 75, no. 2:158-60, 162, 164.
- Swan, Karen, Frank Guerrero, Marco Mitrani, and John Schoener. 1990. Honing in on the target: Who among the educationally disadvantaged benefits most from what CBI? *Journal of Research on Computing in Education* 22, no. 4:381-403.
- Swanson, Judy. 1995. Systemic reform in the professionalism of educators. *Phi Delta Kappan* 77, no. 1:36-39.
- Sykes, Gary. 1996. Reform of and as professional development. *Phi Delta Kappan* 77, no. 7:465-67.
- Sykes, Gary, and Peter Plastrik. 1993. *Standard setting as educational reform*. Trends and Issues Paper, no. 8. Washington, DC: American Association of Colleges for Teacher Education, ERIC Clearinghouse on Teacher Education.
- Tainsh, Paul. 1994. Central Park East Elementary Schools: Social benefit analysis study. Report submitted to the Bruner Foundation. Bruner Foundation, New York. Photocopy.
- Tennessee Board of Education. 1992. *Professional development policy for Tennessee's schools*. Nashville.
- Tennessee Education Association. n.d. Technology in education position paper. Tennessee Education Association, Nashville. Photocopy.
- Todnem, Guy R., and Michael P. Warner. 1994. The QUILT Program assesses teacher and student change: Demonstrating the benefits of staff development. *Journal of Staff Development* 15, no. 4:66-67.
- Tudor, Alene L. 1995. Letter to The National Foundation for the Improvement of Education. 22 November.
- Tuss, Paul. 1995. *Assessment of the National Faculty's Smithsonian Institution program: Preliminary report*. Rockville, MD: Westat, Inc.
- Tuthill, Doug. 1994. New unionism defined. *Doubts and Certainties* 9, no. 1:1-5.
- U.S. Advisory Council on the National Information Infrastructure. 1995. *Common ground: Fundamental principles for the National Information Infrastructure*. Washington, DC: U.S. Advisory Council on the National Information Infrastructure.
- . 1996. *Kickstart initiative: Connecting America's communities to the information superhighway*. Washington, DC: U.S. Advisory Council on the National Information Infrastructure.
- U.S. Congress. Office of Technology Assessment. 1995. *Teachers and technology: Making the connection*. OTA-EHR-616.
- U.S. Department of Education. National Center for Education Statistics. 1994. *Qualifications of the public school teacher workforce: 1988 and 1991*. Washington, DC.
- . 1995a. *The condition of education, 1995*. Washington, DC.
- . 1995b. *Teacher supply in the United States: Sources of newly hired teachers in public and private schools, 1988-1991*. Washington, DC.
- U.S. Department of Education. Office of Educational Research and Improvement. 1994. *Who's in charge? Teachers' views on control over school policy and classroom practices*. Washington, DC.
- U.S. Department of Labor. Secretary's Commission on Achieving Necessary Skills. 1991. *What work requires of schools: A SCANS report for America 2000*. Washington, DC.
- Useem, Elizabeth, Judy Buchanan, Emily Meyers, and Joanne Maule-Schmidt. 1995. Urban teacher curriculum networks and systemic change. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Vermont Department of Education. 1995. *The Green Mountain challenge: High skills for every student: No exceptions, no excuses: Vermont's plan for improving education*. Version 3.1. Montpelier.
- Virginia Department of Education. 1990. *The Virginia recertification manual*. Richmond.
- . 1993. *Licensure regulations for school personnel*. Richmond.
- Wallace, David K., and Keith F. Allum. 1992. Developing teacher leadership for educational reform: New directions for teacher expertise. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Wallace, David K., and Peter Wilson. 1994. Teacher leadership. The Danforth Foundation, St. Louis; The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Washington Education Association Education Task Force. [1989?]. *Restructuring public education: Building a learning community*. Federal Way, WA: Washington Education Association.
- Webb, Norman L., Susan D. Pittelman, Thomas A. Romberg, Allan J. Pitman, Edel M. Reilly, and James A. Middleton. 1991. *San Diego Urban Mathematics Collaborative: Four-year site report*. Program Report, no. 91-5 SD. Madison: University of Wisconsin, School of Education, Wisconsin Center for Education Research.
- West, Peter. 1996. A virtual network. In *Inquiring minds: Creating a nation of teachers as learners*. Special pullout report. *Education Week*, 17 April.
- Wheelock, Anne. 1995. Standards-based reform: What does it mean for the middle grades? The Edna McConnell Clark Foundation, New York. Photocopy.
- Wilson, Kenneth G., and Bennett Daviss. 1994. *Redesigning education*. New York: Henry Holt and Company.

- Wilson, Sandra Meacham, and Jean Coolican. 1993. Teacher self-empowerment: Implications for professional development. Paper presented at the annual meeting of the American Educational Research Association, Atlanta.
- Wilson, Suzanne M., Penelope L. Peterson, Deborah L. Bell, and David K. Cohen. 1996. Learning by all. *Phi Delta Kappan* 77, no. 7:468-70, 472, 474-76.
- Wise, Arthur E. 1993. A vision of the future of teachers, teaching, and teacher education. *National Forum: Phi Kappa Phi Journal* 73, no. 4:8-10.
- . 1994a. Choosing between professionalism and amateurism. *The Educational Forum* 58, no. 2:139-46.
- . 1994b. The coming revolution in teacher licensure: Redefining teacher preparation. *Action in Teacher Education* 16, no. 2:1-13.
- . 1994c. Teaching the teachers. *The American School Board Journal* 181, no. 6:22-25.
- . 1995. Teacher professionalism: The movement has begun. *The ERIC Review* 3, no. 3:12-13.
- Wise, Arthur E., and Jane Leibbrand. 1993. Accreditation and the creation of a profession of teaching. *Phi Delta Kappan* 75, no. 2:133-36, 154-57.
- Withycombe, Richard J. 1994. 1993-1994 program evaluation: Staff Training Assistance and Review (STAR) Program. Withycombe, Scotten, and Associates, Portland, OR. Photocopy.
- Wohlstetter, Priscilla. 1995. Getting school-based management right: What works and what doesn't. *Phi Delta Kappan* 77, no. 1:22-26.
- Wood, Fred H., and Steven R. Thompson. 1993. Assumptions about staff development based on research and best practice. *Journal of Staff Development* 14, no. 4:52-57.
- Yoder, Nancy. 1994. Teacher leadership: An annotated bibliography. The Danforth Foundation, St. Louis; The National Foundation for the Improvement of Education, Washington, DC. Photocopy.
- Zimpher, Nancy L. 1995. Memorandum to Franklin County, Ohio area superintendents and teacher association presidents regarding the 1993-95 exchange of services agreement with The Ohio State University, 10 July.

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In 1969, nearly a decade and a half before education reform forced its way onto the American political agenda, members of the National Education Association (NEA) created The National Foundation for the Improvement of Education. NFIE's Board of Directors, which commissioned this report, includes leaders from education, business, labor, and the service professions.

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This report is dedicated to all who go to school to teach and to learn.

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OVERVIEW

To improve student achievement, public schools must weave continuous learning for teachers into the fabric of the teaching job. This work can and should be initiated by the teaching profession itself in partnership with other educators, communities, districts, and states.

TEACHERS' PRIMARY CONCERN: STUDENT ACHIEVEMENT

NFIE's national survey of more than 800 teachers found that their top reason for participating in professional development is to bolster their ability to help students learn. Almost three in four said they engage in professional growth to improve student achievement (73 percent) and a majority (55 percent) said they participate in professional development to improve their teaching skills.

FINDING THE TIME TO BUILD PROFESSIONAL DEVELOPMENT INTO THE LIFE OF SCHOOLS

Ask teachers what they need in order to do a better job, and the first response is always "more time." Teachers not only work while in front of a class, but also frequently need to prepare as many as five different lessons every day as well as correct papers and mark tests. Yet somehow they are expected to find their own time to develop and update their knowledge and skills to maximize student learning. Time must be made available so that professional development for teachers can become a seamless part of the daily and year-long job as it is in other

countries. Many high-performing corporations also have built learning into the job for all of their workers. For American schools to become such learning enterprises, they must rearrange their schedules to make better use of existing time and make new time available for teachers to learn and keep abreast of change.

HELPING TEACHERS TO ASSUME RESPONSIBILITY FOR THEIR OWN PROFESSIONAL DEVELOPMENT

While teachers are trained professionals, they have been allowed little control in the past over their professional lives. NFIE has found that the most effective schools are those in which teachers make the important decisions about their teaching and the life of the school as a whole. In these schools, teachers' responsibilities have grown beyond their isolated classroom walls to embrace the success of all children and adults who work in the school. Helping students achieve high standards of learning entails continuous improvement in teaching and expanded leadership roles for all teachers, including providing peer assistance and review.

FINDING COMMON GROUND: WORKING WITH THE COMMUNITY TO PROVIDE HIGH-QUALITY PROFESSIONAL DEVELOPMENT

Although teachers must be allowed greater responsibility, they should not carry the entire burden alone. To increase their ability to serve students, teachers need partners who can help them enhance their knowledge and skills. Parents are teachers' most important partners. Other partners include universities, libraries, museums, other community organizations with educational missions, and businesses. Teachers and these organizations should form long-term, genuinely collaborative relationships. Such cooperation could fulfill the obligation of each of these educational, cultural, or private organizations to

the public. Rich resources should be made available to support teachers' and students' learning. Each community should enhance or create long-term partnerships for teachers' professional development. In addition, the federal government should establish a national institute for teachers' professional development.

FINDING THE REVENUES TO SUPPORT HIGH-QUALITY PROFESSIONAL DEVELOPMENT

Full information on how much states and districts currently spend on professional development is not available. Various studies recommend increasing expenditures by specific amounts or percentages, but the job of teaching envisioned and recommended by this report suggests a long-range goal of institutionalizing such expenditures and requiring all education funds to be supportive of teaching and learning. New expenditures may also be necessary to build high-quality professional development into the foundation of the teaching job. These can be calculated if states and districts will undertake an assessment of their current professional development expenditures, agree with teachers' organizations on appropriate measures of professional development effectiveness, and gain public support for new appropriations as needed.

TEACHERS TAKE CHARGE OF THEIR LEARNING

Transforming Professional Development for Student Success

EXECUTIVE SUMMARY AND RECOMMENDATIONS

Every profession has a system through which its members can hone skills, improve practice, and keep current with changes in knowledge, technology, and the society it serves. Doctors, lawyers, architects, accountants, and engineers regularly participate in workshops, seek advanced degrees or certification, and serve as or work with mentors. Professionals in most fields routinely network with fellow practitioners, conduct and review research, and talk to experts and colleagues about new trends, thorny issues, and plans for improvement.

These opportunities for professional growth and renewal often take place within the workplace and are integrated into the daily life of the practitioner. Opportunities to develop professionally not only benefit the individual in shaping and performing his or her craft but also help ensure that best practice is everyday practice and that the most effective approaches are used. In fact, the ability of practitioners to engage in ongoing, high-quality professional development is a hallmark of enterprises that are known for high performance and that, not surprisingly, enjoy sustained public confidence.

Unfortunately, the nation's schools fail to provide adequate professional development for teachers. Today's teachers are expected to keep abreast of new knowledge, individualize instruction for a diverse population of students, help all students achieve high standards, introduce new technologies into the classroom, become expert in student growth and development, help manage the school, and reach out to

parents and the community. America's teachers are striving to do all this and more, but they find themselves pressed for time and opportunities to learn. Teachers should work collaboratively; yet all day they are isolated from other adults. Neither the time nor the telephones are available to communicate with other professionals in or outside the schoolhouse.

IMPROVING THE BOTTOM LINE

As in other fields, the goal of professional development in schools must be to improve results, not simply to enhance practice. Teachers are clear about their priority: The goal of professional development for teachers is increased student learning.

Asian and European nations regularly invest in opportunities for teachers to upgrade their skills, observe exemplary teaching, plan lessons, and work collegially. Japanese teachers, for example, spend roughly 40 percent of their working day on professional development and collegial work, compared with only 14 percent for American teachers. American business recognizes that learning is part and parcel of every job in a learning organization. Business restructured in the 1980s and government in the 1990s to build professional learning into the workplace. Now is the time to do so in our public schools.

Parents and the public also know that teacher quality is crucial to student success. That is why parents go to great lengths to ensure that they have the best teachers for their children and why they protest so vehemently when they perceive that a teacher does not meet their standards. Research by The Public Agenda Foundation indicates that the public expects teachers to teach the basics and to elicit higher levels of achievement from students. Public Agenda's research for The National Foundation for the Improvement of Education (NFIE) further indicates that the public recognizes the need for better partnerships between teachers and parents and for schools to view informa-

tion technologies as a new "basic" that all students must learn if they are to prosper in school and in life.

Teachers themselves recognize that the goal of their effort to reinforce their own teaching skills must be to improve student learning. Greenberg Research, Inc., and The Feldman Group, with support from NFIE and the National Education Association's (NEA) Research Department, conducted the first ever national survey of teachers' own views of what they value in professional development and what they think would be most effective in improving their ability to serve students. Nearly three-fourths of teachers surveyed identified helping students learn as the first priority for professional development. One respondent defined "professional growth" as "any course of action that [I] can work on to improve [my] teaching skills to better serve students." Most respondents used phrases such as "keeping up" to define professional growth—keeping up "with technology," "with [the] latest trends," "with my field," and so on. "Updating," "continuing," "becoming," "improving," and "increasing" abilities to serve students were at the heart of the responses. Other teachers said, "improving my own skills as a teacher, as a colleague"; "[to] teach better [and] help my students"; "we are all learners [and] must grow if children are to grow"; "learning cooperatively with students, teachers, parents"; "meeting the needs of the students"; "to be a better teacher"; "becoming a better teacher"; and the poignant "being better than I was last year."

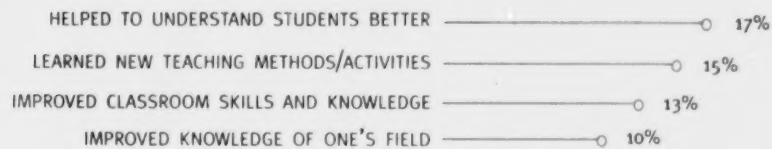
NFIE asked teachers to think "back over your professional life since you began teaching full-time, [and describe] the one formal or informal professional growth experience which has had the most profound effect on you as a teacher." Our survey respondents mentioned specific courses, seminars, workshops, and degree programs 30 percent of the time. They also ranged far beyond these formal, traditional means of learning, however, to name the day-to-day work of a teacher,

including collegial interactions and the success of their students.

What made these experiences so profound and rewarding? Once again, students came first. Above all, survey respondents said that professional development helped them understand students better (*Figure 1*).

Figure 1

WHY TEACHERS SAID THEIR MOST PROFOUND PROFESSIONAL GROWTH EXPERIENCES WERE IMPORTANT—TOP RESPONSES



Data Source: Greenberg Research, Inc.

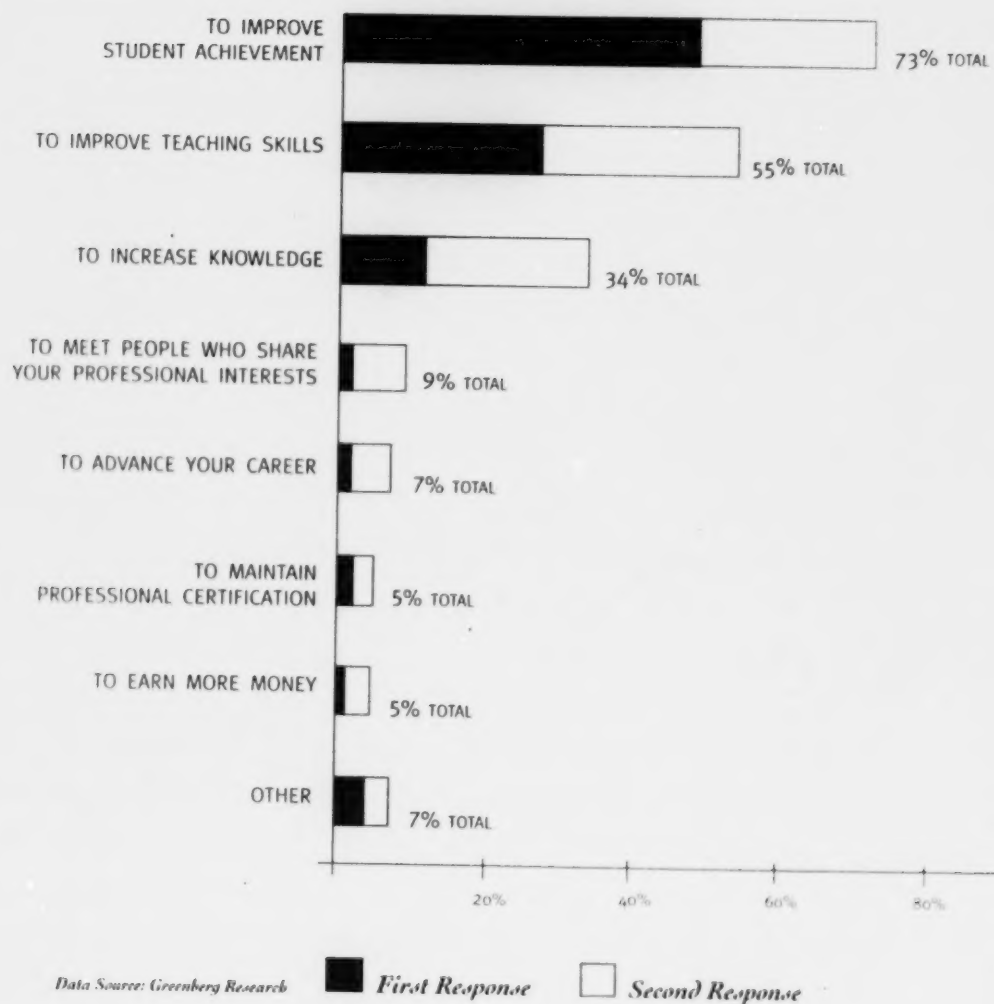
First and foremost, teachers engage in professional growth to improve student achievement (73 percent). Improving teaching skills took next place (55 percent), and increasing their own knowledge took third place (34 percent). Career advancement (7 percent), financial reward (5 percent), and maintaining professional certification (5 percent) were rock-bottom motivators (*Figure 2*).

Research findings support the connection between teacher learning and student performance. For example, students' achievement in science and mathematics is linked directly to the extent to which their teachers have had substantial formal education in these fields. For the use of technology to enhance student learning in various fields, findings are beginning to emerge that show teacher competence directly linked to student learning. Professional preparation for teaching, formal certification, and formal induction programs are also linked strongly to student achievement. Research findings are emerging on the connection between school-based, peer-assisted learning and student achievement as well. The research base is clear for both beginning and experienced teachers: Sustained, in-depth teacher learning connects directly with student results. These links depend, however, on teachers' ability to apply

their learning to their teaching assignment. When teachers' choices for learning connect closely with teaching assignments and school programs, students flourish. One-shot, district-determined, short-term programs have little effect on either teachers' or students' growth.

Figure 2

TEACHERS' MOTIVATION FOR GROWING AS PROFESSIONALS



NEW DEMANDS FOR A NEW ERA

Changing times require that schools become learning enterprises for teachers and for students. The way teachers currently learn on the job was designed for teachers of an earlier time before the public grew concerned with higher standards and improved performance for all students.

Today, teachers are no longer perceived as mere functionaries handing out and collecting materials prepared by commercial or bureaucratic sources outside the classroom. Modern teaching and learning are no longer packageable and require sophisticated approaches to teacher development and to the organization of the workplace where teachers spend their days.

Today, all students are expected not only to learn the basics but also to master new information technologies in order to enter a world of work where there are fewer and fewer routine jobs, where a career will span a number of different jobs of varying complexity, and where flexibility and teamwork are necessary to make the grade throughout life. Today, school faculties are taking on more responsibilities for student growth, tailoring curriculum and assessment to meet student and community needs, and even managing the school.

Today's teachers must take on new roles within the school and be able to teach young people from diverse backgrounds by drawing on a large repertoire of subject matter and teaching skills. Teachers now must be sensitive to varying social demands and expectations; must be able to diagnose and address the individual learning and development needs of students, including special emotional, physical, social, and cognitive needs; must be able to use information technologies in all aspects of their work; must make important decisions about what and how much to teach of the overwhelming amount of new knowledge being created in every field; and must reach out more effectively to parents and the community than ever before.

NFIE DEFINES HIGH-QUALITY PROFESSIONAL
DEVELOPMENT AS THAT WHICH

- has the goal of improving student learning at the heart of every school endeavor;
- helps teachers and other school staff meet the future needs of students who are in different ways and who come from diverse cultural, linguistic, and socioeconomic backgrounds;
- provides adequate time for inquiry, reflection, and mentoring and is an important part of the normal working lives of school professionals;
- is relevant, sustained, and aligned to the long-term change of professional practice;
- is directed toward meeting the needs of the school and community;
- fosters a deepening of subject matter knowledge, a greater understanding of the world, and a greater appreciation of student learning;
- is designed and delivered by teachers, who embody the best principles of adult learning, and involves shared decisions designed to improve the school;
- balances professional priorities with school and district needs and values the professional as a whole;
- makes best use of new technologies;
- is site based and supportive of a clearly articulated vision for students.

MEETING PUBLIC EXPECTATIONS

The public has made it clear that this is a time for improved results in American education. To help achieve those results, teachers need time to master new knowledge and to work with their colleagues and with partners to build on what they know. They need flexible scheduling and an

extended year to integrate professional growth into the structure of the school day. Teachers need time to develop expertise in using information technologies to develop new pathways to knowledge for students. And they need opportunities to build meaningful partnerships with parents, businesses, and educational and cultural institutions to create exciting new learning experiences.

Other changes are needed as well. Teachers need opportunities to take on new roles within the school, serving as mentors, facilitators, community liaisons, curriculum development and assessment experts, and managers of change. In the words of Gerry House, superintendent of the Memphis City Schools and a member of the NFIE Board of Directors, "Conventional wisdom says that principals must be lead teachers. The fact is, teachers can take the lead. We need teachers to become leaders and principals to be leaders of leaders."

Because helping students achieve requires the collaborative work of many adults in each school and community who share responsibility for educating students, teachers must participate in the collective growth and development of other teachers in the school. A fundamental part of that work is the continuous improvement and growth that changing times, changing students, and a changing society necessitate. Expanded roles for teachers must include opportunities to provide peer assistance and review. For teachers to take charge of their learning, they and their organizations must play a role in enabling all teachers to become even better. If after sustained assistance by specially prepared peers some do not meet professional standards of practice, they should be counseled to leave the profession. Collective bargaining, where it exists, and advocacy can be major avenues for bringing about NFIE's recommendations. Teachers' organizations and partnering districts, states, and others can together make this vision a reality.

This report explores the conditions and policies needed to incorporate teachers' learning into the very fabric of their daily work in our

schools. It identifies the incentives, processes, policies, and structures that support wise, shared decisions about teachers' own learning and that of their colleagues, the better to serve their students.

The report challenges principals and other school administrators, working with teachers and existing resources, to create workplaces that support teachers' ongoing professional development. It challenges educators and communities to find a way to measure accurately what resources are devoted to professional development and to ensure that sufficient resources are available and well spent. The report also challenges teachers and community leaders to create time for teachers' learning and partnerships with community institutions that will nurture teachers' growth and students' success.

MAJOR RECOMMENDATIONS

FIND THE TIME TO BUILD PROFESSIONAL DEVELOPMENT INTO THE LIFE OF SCHOOLS

Teachers spend almost all of their school days and school year in direct contact with students. This time is precious and should not be reduced. Yet time for teachers to plan and review student work, mentor and observe other teachers, study, develop new programs and methods, hone leadership skills, and manage student learning and the work of the school is essential to good teaching in the classroom. Some of the ways to find time for this work include:

1. FLEXIBLE SCHEDULING

Reorganize time in the school day to enable teachers to work together as well as individually both daily and weekly and throughout the year.

2. EXTENDED SCHOOL YEAR FOR TEACHERS

Redefine the teaching job to include both direct student instructional time and blocks of extended time for teachers' professional development. Extend the length of the school year, allowing for up to four weeks for teachers' professional development while students are on vacation. Organize the teachers' year to include intensive, sustained study by staff as determined by school-based decisions directed toward increasing student learning. Intensive study should be supported by year-long follow-up.

RECOMMENDATIONS

HELP TEACHERS TO ASSUME RESPONSIBILITY FOR THEIR OWN PROFESSIONAL DEVELOPMENT

In the past, teachers have been told what to do and given minimal tools with which to do it. Evaluating their performance was a matter of checking off a list of whether they did what they were told. In today's effective schools, however, teachers make important decisions about their own teaching and the school as a whole, know and understand child development and the children they teach, share responsibility for all the children in the school with their colleagues, and take part in building professional knowledge with their peers. Teachers' responsibilities have grown beyond the isolated classroom walls to embrace the success of all children and adults who work in the school. Expanded responsibilities entail teachers' assuming expanded roles.

To enhance student learning in modern schools means to practice high standards for teaching, to assist one's colleagues, and to be assisted in reaching and maintaining those standards. Some ways of achieving this level of professionalism include:

1. SCHOOL-BASED PROFESSIONAL DEVELOPMENT

Professional development in schools should be based on an analysis of the needs of students in those schools and should be consistent with the district's mission and professional standards.

2. STANDARDS AND ACCOUNTABILITY

Professional development goals and plans should be decided locally by the school community of teachers, administrators, and parents. Standards for student learning and standards for professional practice should guide the design, conduct, and evaluation of professional development, and these standards should recognize and measure teachers' expanded roles.

3. BALANCING INDIVIDUAL TEACHERS' AND SCHOOL NEEDS FOR LEARNING

Individual teachers should design their professional development plans to fulfill their schools' needs for expertise. Schools should recognize teachers' individual as well as whole faculty interests in pursuing professional development.

4. PEER ASSISTANCE AND REVIEW

Teachers should assume responsibility for their continued growth and effectiveness. Teachers and administrators should collaborate in each district to create peer assistance and review to nurture the practice of all teachers and to counsel out of teaching those who, after sustained assistance by their specially prepared peers, do not meet professional standards of practice.

5. EXPANDED ROLES FOR TEACHERS

Teachers should study new instructional approaches, subject matter, and skills that enhance instruction, such as the use of information technologies, interpersonal and management skills, and skills for reaching out and including parents, business, and community resources in children's learning. Teachers who have gained such expertise should have multiple opportunities and time to fulfill expanded roles and to exercise leadership. Principals and other administrators should recognize, honor, and support teachers in these expanded roles.

6. INDUCTION OF TEACHERS

The induction of novices into teaching is dealt with in a report issued by the National Commission on Teaching and America's Future. In addition to the induction of novices, every school should organize a substantial, year-long program through which its faculty will introduce new colleagues who are experienced teachers into the philosophy and operation of the particular school and help them refine their practice.

RECOMMENDATIONS

FIND COMMON GROUND: WORK WITH THE COMMUNITY TO PROVIDE HIGH-QUALITY PROFESSIONAL DEVELOPMENT

To enhance teachers' knowledge and skill so as to serve students more effectively, teachers need partners. Their primary partners are the students' parents. Community, state, and national resources for high-quality professional development are also integral to improving student achievement through teachers' ongoing learning.

Higher education institutions as a whole, as well as schools of education, are major resources for teachers' professional development. These institutions are supported by the public directly through tax revenues, through tax-supported grants and contracts, and in the case of private institutions, through their tax-free status. Higher education and scholarly and scientific societies all benefit directly from such public support because the public believes the advancement of general knowledge is a benefit for all. NFIE urges all higher education institutions and related research societies to recognize the public school teachers of America as a major conduit through which advances in knowledge are transmitted to the public.

Higher education institutions' central mission—to discover and to educate—should include teachers' professional development in all fields and all branches of learning. Teachers and districts should invite higher education institutions to become substantial partners in teachers' professional development in a variety of locally determined ways, and higher education institutions should acknowledge this work as essential to their mission.

In addition, most communities and regions have an array of other resource institutions that are vital to teachers' ongoing learning. These include public and private libraries, museums, historical societies, archaeological and natural sites, arts organizations, businesses, and government resources.

Over the past fifteen years, many of these resource institutions, as well as higher education, have joined with teachers in a host of high-quality professional development partnerships. Few of the programs, however, have survived without grants. Partnerships with academic and cultural institutions need to be more strongly linked both to effective professional development and to changed practice and content in the schools.

To promote high-quality, ongoing, school-based professional development, teachers must recognize the value of these resources, and the resource institutions must recognize their responsibility to teachers. Together, teachers and their partners can create new knowledge and skill that partake both of the world outside the school and build on school-based peer assistance. These two forms of learning and growth are essential to the expanded roles of teachers in modern schools. The recommendations that follow seek to establish new, long-term, and vital partnerships among teachers, schools, and other educational and cultural agencies for high-quality professional development.

1. INVOLVE PARENTS, BUSINESS, AND COMMUNITY

At the local level, parents, business, and the community should continue to help schools set the vision for students' success and support teachers' learning. Business should provide employees greater time and opportunity to be active partners in teachers' and students' learning. Parents, communities, and business should work in partnership with schools to reach these goals.

2. COMMUNITY INVENTORY AND PLAN

Teachers' organizations should collaborate with districts to invite local leaders to join in conducting an inventory of available local resources and institutions for teachers' professional growth, including higher education, business, cultural, scientific, and other relevant agencies. "Higher education" should be understood to

RECOMMENDATIONS

include entire institutions in all fields and branches. Having conducted the inventory, these partnering institutions should prepare a plan to join with teachers and districts for long-term collaboration for teachers' professional development. Districts and schools should support teachers' incorporation of the results of this professional development in instruction. Schools should provide time and opportunity for teachers and parents to become partners in the education of students. States should review local inventories and partnership plans to produce statewide analyses of teachers' access to high-quality resources for professional development. Based on these findings, states should develop plans for assuring that such access is sufficient for all teachers.

3. ESTABLISH NEW OR ENHANCE EXISTING PARTNERSHIPS

Many local entities—called teachers' "centers," "academies," "partnerships," "local education funds" or other designations—have been established by districts, states, businesses, higher education, and others over recent years to bring teachers together with other professionals for learning. Each district and state should assure that teachers and resource providers enhance existing entities or establish new ones where teachers, librarians, scholars, scientists, artists, information technology specialists, and others can conduct work they hold and create in common. This work differs both from the profession-building work of peer assistance based in schools, on the one hand, and from scholarship, curatorship, and artistry conducted outside of schools, on the other, and therefore can best flourish in a setting understood to create common ground for both. Each state should assure that partnerships to conduct high-quality professional development, curriculum and assessment development, and the development of technology-based teaching and learning are accessible to all teachers in that state.

4. NATIONAL INSTITUTE

The federal government should establish a national institute for teachers' professional development to support exemplary work that builds the profession. Teachers' organizations should join with specialized associations for educators, scholars, scientists, librarians, museums, and policymakers to develop the national institute.

5. INFORMATION TECHNOLOGIES

Local and national partnerships and entities should make information technologies an integral part of their planning and development and should help teachers use these technologies to maximum benefit.

FIND THE REVENUES TO SUPPORT HIGH-QUALITY PROFESSIONAL DEVELOPMENT

The work ahead must begin with finding out reliably what is already being spent on teachers' professional development, whether it is being spent efficiently, and whether it is adequate to keeping up with change and enabling students to flourish. States and districts should work with community partners and teachers to reallocate existing and appropriate new revenues sufficient to guarantee standards-referenced, quality teaching and learning in every public school. The long-range goal over a period of ten to twenty years should be to rebuild the education system so as to dedicate all work in schools, all management, and all district, state, and federal K-12 education expenditures and activities to improving teaching and learning as measured by suitable standards for student achievement and teaching practice. Interim steps toward this reconception of the teaching job and school organization would include:

RECOMMENDATIONS

1. IDENTIFYING EXISTING EXPENDITURES

States and districts should work with teacher and community organizations to identify current expenditures specifically dedicated to teachers' professional development, reallocate existing expenditures as appropriate to realizing expanded teachers' roles, and determine the needed level of expenditure for professional development to accomplish student success. New or enhanced entities for local partnerships should allocate district and community funds for supporting teachers' professional development.

2. ESTABLISHING APPROPRIATE MEASURES OF THE EFFECTIVENESS OF EXPENDITURES

Districts, states, teachers' organizations, and specialized associations should agree on appropriate standards for measuring the effectiveness of public expenditures on professional development.

NFIE will commence at once to support the implementation of these recommendations in model sites throughout the country and invites the profession and the public to join in support of their success.

SOURCES OF THE REPORT

Teachers Take Charge of Their Learning is based on two years of observations, consultations, surveys, and other studies. NFIE research staff conducted extensive site visits and interviewed teachers across the country. Research was conducted in collaboration with other national education research organizations. NFIE led a series of discussions and workshops with teacher leaders, reviewed accounts of exemplary professional development experiences written by teachers, interviewed teachers, and commissioned public focus groups. A national survey of teachers was conducted for NFIE by Washington-based Greenberg Research, Inc., and The Feldman Group with support from the NEA Research Department and NFIE.

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